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WASHINGTON
UNIVERSITY
IN ST. LOUIS

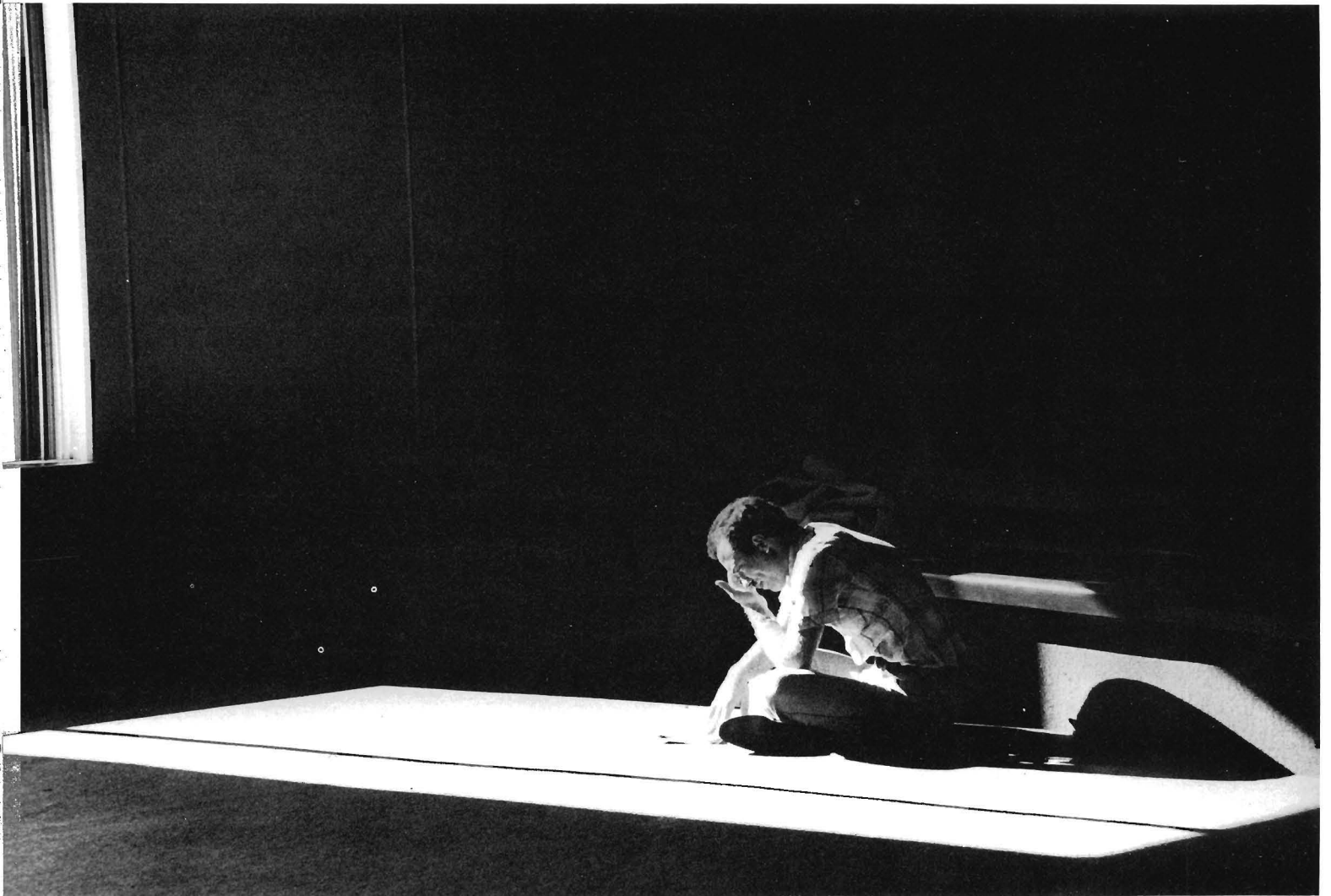
Washington University

Winter 1981

Magazine



*During winter's long sojourn, a
quietness falls upon the campus and
most people are hard at the serious
business of education. Then a pool
of warmth and light becomes a
solitary place, a cherished refuge
until shadow overcomes all.*



Washington University

Magazine

Winter 1981

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Editor

Dorothea Wolfram

Associate Editor and Photographer

Herb Weitman

Contributing Editor

Dorothy Brockhoff

Designer

Stan Gellman

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Commissioning

*Serving on the Commission
on the Future of
Washington University*



Spitznagelmania: Calculated Madness

*The complete campus
busybody*



The Idolatry of Objectivity

*Professor Norris K. Smith's
sermon to freshmen*



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*World-class architects,
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Undergraduates in D.C.



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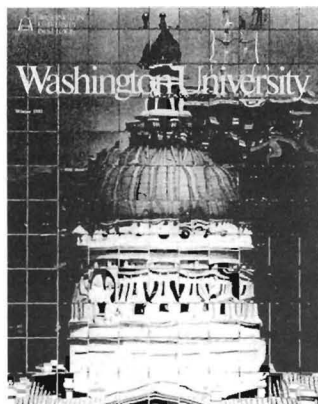
*Wherein being out-of-place
is in*



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The return of William Penn



Cover: St. Louis's Old Courthouse reflected on the skin of the Equitable Building. See HOK, page 20. Back cover, Orville Wright (from the Air and Space Museum, Washington, D.C.)

Commission Chairman

*Chairman of the Commission
on the Future of Washington
University*

W. L. Hadley Griffin
Chairman of the Board and
Chief Executive Officer
Brown Group, Incorporated

Task Force Chairmen

*Architecture, Fine Arts,
Gallery of Art*

George E. Kassabaum
President
HOK, Incorporated

Arts and Sciences

George E. Pake
Vice President, Corporate
Research
Xerox Corporation

Business

Charles F. Knight
Chairman and Chief
Executive Officer
Emerson Electric Company

Dental Medicine

I. E. Millstone
President
Millstone Construction
Incorporated

Engineering

David S. Lewis
Chairman and Chief
Executive Officer
General Dynamics Corporation

Library

Raymond H. Wittcoff
President
Transurban Investment
Corporation

Law

William H. Webster
Director
Federal Bureau of Investigation

Medicine

John W. Hanley
Chairman and President
Monsanto Company

Social Work

James Lee Johnson, Jr.
Vice President
Stifel, Nicolaus &
Company, Incorporated

Student Life

John R. Barsanti, Jr.



*Commission chairman
Hadley Griffin (left) and
board chairman George Capps
with task force reports.*

During the past three years, 270 volunteers served on ten task forces to study the present state of the academic enterprise at Washington University and evaluate the plans for its future direction. What they did and how they felt about it make up this report on commissioning.

COMMISSIONING

In 1979, when Washington University announced its intention of gathering civic and professional persons from outside the University into a Commission on the Future of Washington University, Chancellor William H. Danforth asked members of the body's ten task forces to "listen to our plans, hopes, and needs, and comment on what they hear."

The conception of such a momentous study was, to some extent, audacious. Commission chairman Hadley Griffin, chairman and chief executive officer of Brown Group, explained: "The need for communication between the University and its community, locally, nationally, and even internationally, was obvious, but there was no strong basis in the past experience of institutions such as ours for belief that so many leading citizens would willingly devote the tremendous amount of time and energy which the proposed undertaking called for, or for the belief that the University administration and faculty would listen seriously to what the world beyond the campus might have to tell them. What we were preparing to do had not been done before at an institution of the stature of Washington University. We were truly breaking new ground. The undertaking of this project constituted a tremendous mutual act of faith — and it worked."

Three years, 270 volunteers, 4,400 man- and woman-hours later, there are in the hands of the Washington University Board of Trustees ten loose-leaf volumes of reports: 520 pages of task force counsel and recommendations and another 1,300 pages of supporting documents. The chairmen of the task forces, each a trustee of the University; the officers of the board; and the chancellor constitute an ad hoc committee to study this material and to recommend to the entire board a course of action in support of it.

In his parting remarks to the Business School task force, its chairman, Charles Knight, chairman and chief executive officer of Emerson Electric Company, said, "I have to admit that when this idea was first proposed, I thought it would be a waste of time. However, I have very much

enjoyed it, and I think we have focused on some real issues. It's been a worthwhile endeavor."

His sentiments are echoed by hundreds of other volunteers. "Was it worthwhile?" says Helen Paige, a former student-body president serving on the Student Life task force. "Of course, but I wouldn't have served if I did not think that it would be. I asked a lot of questions first and became convinced that the University was honestly seeking outside opinion and constructive criticism. And though I could not attend every meeting, I am also convinced that that is what the members of the Student Life task force gave."

"From my standpoint as chairman," said Griffin, "it has been an unforgettable experience. Working with members who gave so generously of their time in spite of heavy demands of business or profession has given me exceptional personal satisfaction. The members of this commission made a contribution of immense and enduring value. They were an exceptional group of individuals. They saw the commission as an important undertaking and wanted to be a part of it. I believe that their participation is a tribute to the excellence of Washington University."

"The Commission on the Future of Washington University was designed to test the plans of the major units of the University critically, to help the University see itself as others see it, to be critical in the best sense and so to assist in the formulation of future objectives."

Each task force was constituted so that within the group were business and civic leaders, alumni, trustees, persons involved in practice in the specific unit of the University under study, and professional educators including faculty members, department heads, deans, and administrators from Northwestern, Harvard, Stanford, Temple, Illinois, Missouri, Cornell, Pennsylvania, UCLA, Boston, Worcester Polytechnic, North Carolina, Baylor, MIT, Columbia, Johns Hopkins, and Kentucky.

Members of the task forces represented ninety-seven companies employing hundreds of thousands of people throughout the world. Included were

Commissioning

George Kassabaum, president of HOK, Inc., presents the Architecture, Fine Arts, Gallery of Art report.

On December 10 at a dinner at the Chase-Park Plaza Hotel in St. Louis, the report of each task force was turned over to Griffin and then to Capps.



John R. Barsanti, Jr., presents the report of the Student Life task force.



David Lewis, chairman of the board of General Dynamics Corp., presents the Engineering task force report.

Task forces gathered an average of six times each, usually for day-long meetings with deans, administrators, department heads, and faculty. Chancellor Danforth speaks to the Business task force.



seventeen Fortune 500 companies, fifty-eight St. Louis companies, twenty-two law firms, and seventeen banking and financial institutions with assets totaling \$15 billion. Nearly 140 alumni of the University served. The task forces met fifty-eight times, often with deans, faculty, and students, and countless other hours of interviews were conducted independently.

Griffin added, "No task force report fails to comment on the thoroughness, the organization, and the openness with which our deans, department heads, and faculty members supported this inquiry."

The perspective of university peers is eloquently expressed by Edward G. Holley, dean of the School of Library Services, University of North Carolina, Chapel Hill. "I originally accepted the assignment because Charlie Churchwell (dean of the Washington University libraries) is an old friend of mine. But I also believed the process was one of the most interesting attempts at long-range planning that I had heard of, and I found it so. Fred Kilgour (president and executive director of Ohio College Library Center) and I represented the profession, but alumni, friends, and donors all participated actively and shared information.

"Unlike some self-studies, the University's librarians did not give a status report; they took a hard look at where the library was and where it ought to be. It was a very forward thrust.

"I especially liked the blend of people, some with very narrow interests and some very broad. I found it an exciting and challenging professional opportunity, and I think that Washington University is well served by the process—not just immediately, but in the long run."

Lawrence Roos, president of the Federal Reserve Bank of St. Louis, says he had thoughts about the why of his membership on the Social Work task force. "At first I thought that my background was not very suitable for social work analysis, but the leadership of the school and the social work practitioners who served made the issues crystal clear and since many of these are monetary, I felt I could contribute in a practical sense. It was a stimulating experience."

"From a totally different standpoint," said Eugene Leonard, senior vice president of Mercantile Bancorporation and a member of the Dental Medicine task force. "I learned a great deal. As national president of the Missouri University alumni, I got some insights into the problems of

higher education that are very helpful. But I think that the process was more self-study than study from outside. By having a group of outsiders listening, I believe that the faculty and administrators were more critical of their own assessments and more realistic in measuring their own plans for the future.

"Even with that perspective, even believing that they were not looking to us for insights, I consider my time well spent, because I was learning. It was not a pat endorsement and acceptance of what we heard. There was fairly heated exchange at some points, particularly from the professionals present. I thought that I was to bring some economic expertise and the report reflects some of my input."

"It's the understanding that came about on the part of committee members which I think is most valuable to the University," said a member of the Architecture, Fine Arts, Gallery of Art task force. This task force, like the task force on Arts and Sciences, found its assignment too diverse to be handled by one body and split into subcommittees. Though its overall chairman, George Kassabaum, president of HOK, reminded all that many concerns span and unite the visual arts, the task force report contains three sets of recommendations.

"I am confident," said Robert Entzeroth of Smith & Entzeroth, St. Louis, "that the architecture report is a sound evaluation of the present and a guide to the future. Our committee had a good variety of top professionals and I felt it important to be able to say what I wanted to say about the future. The relationship between the school and the profession has not always been as close and as cordial as it has been in the past few years, but today if the profession has not had good input, it is not the fault of the University. We have been through a long process to develop a top quality professional school, but that could quickly be lost without diligence and support."

Each task force report is different in form, as well as content. Some address specific needs with specific solutions; others address areas of concern, make suggestions both global and particular, recommend courses of action, set priorities, endorse current practice but sometimes with reservations.

The reports—as different as the deans who supported them, the chairmen who directed them, and the participants who took part—indicate that some schools, departments, and programs are in great need of new facilities and more funds. They acknowledge expectations that can only be realized

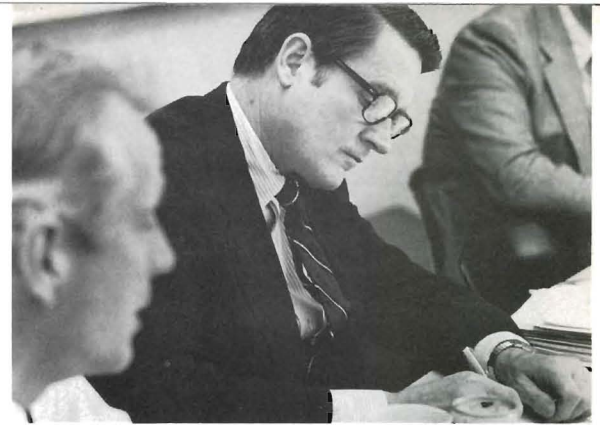
Commissioning

William Webster, director of the Federal Bureau of Investigation, chairman of the Law task force.

Richard Sutter, M.D., served on the Library task force.



David Rabinowitz (right), executive vice president of the Jewish Federation of St. Louis, talks with Stanley Richman, executive director of the commission, during a Social Work meeting.



by concentrated new effort. They say frequently, "This is where the University is; here is where it wants to be. Our study confirms the rightness of these goals, and we believe that with careful management and planning, they are within possibility, but it will take effort." None is bleak; none is downbeat; none recommends drastic change or scuttling of plans to push for excellence in all phases of University endeavor. All are thoughtful and provocative.

In his address to task force members, gathered for a dinner meeting on December 10 at the Chase-Park Plaza Hotel in St. Louis for the formal presentation of the report of the commission to the board of trustees, Chancellor Danforth said, "We have learned that review by outside groups can result in meaningful, two-way communication. We have been challenged beyond measure. We have learned that people, when they become involved with Washington University, become enthusiastic and that sometimes those most critical of the status quo are also those who are most positive and enthusiastic about the opportunities that might be seized.

"We have learned that deans, faculty, and students are appreciative of the interest of outsiders, are anxious to present their goals and problems, and are attentive to the opinions of others. The mix of board members, professionals, and interested alumni was quite productive.

"Let me try to put the labors of the commission in perspective. An enormous amount of work has gone into the task force reports. It's not the first time a lot of work has been expended on Washington University. As one looks over the years, the energy and treasure put into Washington University have been immense. The institution has been served by faculty, administrators, trustees, and friends.

"It is easy to lose sight of the big picture, but I truly believe that we are about one of the modern era's most important missions: the maintenance and strengthening of a great research university.

"It is not easy to face the fact that we human beings live in a turbulent and dangerous world with the power to blow ourselves up. If history gives us clues to human behavior, we are likely to do just that. For this reason alone in 1981 we have to believe in learning and education, because we have to believe in progress. There is no alternative to the hope that humankind can improve and that civilization can evolve a peaceful world of justice under law. That hope is a weak reed without faith,

Walter Massey, director of Argonne National Laboratories, and Carolyn Losos, who headed the humanities section of the Arts and Sciences task force. Both are alumni.



faith that knowledge and understanding can be passed on so that each succeeding generation can build on the accomplishments of its predecessors and learn from the mistakes of those who have gone before.

"If our mission is to play an important part in dealing with these large issues, we are involved in an exciting effort and we ought to go about it in a first-class way. We need the highest standards and the best people. We need to educate the most exciting students.... We need to apply the highest standards to ourselves and to our colleagues. For if we do, the research and learning, the wisdom of scholars, the discoveries in the laboratory and clinic will travel the globe and benefit all people, not only in our time but in future times.

"There may be errors and mistakes along the way. One can't always predict what students, or faculty, or even chancellors, trustees, or friends will do or say, but I personally want to be associated with a first-rate operation. I want our contributions to be great, not trivial."

Upon receiving the task force reports from Griffin, board of trustees chairman George Capps said, "The commission, having so admirably discharged its mission, I now declare decommissioned. To you and all of the persons whose work these reports reflect, I again express our deep appreciation."

The commission report has been turned over to the board's ad hoc committee. Its job in the coming months is to study the ten individual reports in detail and to make recommendations to the board on the future of Washington University.



David Bensinger, D.D.S., associate dean of the School of Dental Medicine, speaks to the Dental Medicine task force.



Jean Hobler, a member of the Arts and Sciences task force.



John W. Hanley, chairman and chief executive officer of Monsanto Company, confers with Samuel Guze, M.D., vice chancellor for medical affairs, during the task force study.

Spitznagelmania

Calculated Madness



When Herb Weitman arrived at Ed Spitznagel's small office in Cupples I, here's what he found. A moment later, he said, a student on crutches hobbled in.

On campuses at both ends of Forest Park, Edward Spitznagel is engrossed in computerizing research to simplify and classify both the gathering and analysis of data. But he is also one of the main campus's most engaging teachers.

By Jill Murray



In his own words, Edward Spitznagel, Jr., is a busybody; furthermore, he makes a profession of it. Although he discovered a talent for science early in life, he balked at working in one specific discipline. He finally chose mathematics as a likely way to poke about in the many nooks and crannies of the scientific world.

It was a wise move, colleagues agree, because where he pokes, they say, he defines, unscrambles, enlightens. At home with all manner of statistical analyses, he juggles masses of numerical data with ease; the computer is an intimate friend.

"A lot of us play with numbers," says co-worker John Gohagan, "but Spitznagel *reads* numbers the way others read words."

Spitznagel joined the Washington University department of mathematics in 1969 as a pure theorist, wrangling with postulates, paradigms, and proofs in traditional areas like group theory. But it was not long before he was off into other orbits, spending time at the University's computing facilities, creating new courses through the General Studies committee, offering statistical advice to medical researchers and administrative offices. It also was not long before his name was widely known on campus.

"Shall I ask our computer-science work-study student to write a program to analyze this data and struggle through a learning process or shall I take it to Ed Spitznagel and have him tell us what to do with it in fifteen minutes," mused one administrator last spring facing a haystack of survey responses.

To the office of admissions, Spitznagel is a computer-wise expert on analyzing prospective and incoming student questionnaires. To the department of biostatistics at the School of Medicine, he is an adjunct professor, recruited to teach a particularly tough medical school course. To the hilltop department of psychology and the medical school departments of psychiatry, anesthesiology, plastic surgery,

otolaryngology, and preventive medicine, he is an invaluable collaborator who makes records and research data meaningful. And to students, he is a favorite teacher who sends Christmas cards to his class members and posts their calculus test scores an hour after an exam. He keeps three mailboxes across the hilltop and medical school campuses; he has a desk in four different offices.

"He busybodies, yes, but he never putters," observes Robert McDowell, chairman of the department of mathematics. "He's very direct, very down-to-earth, very let's-get-the-job-done oriented."

McDowell talked about Spitznagel, whom he considers one of the department's most valuable professors, on an Indian-summer morning in October. A few days before, he had returned from a five-month stay as a visiting scientist in Czechoslovakia. Strung behind his desk was a twelve-foot computer-printed banner which read, "Welcome back Bob"—one of Spitznagel's less-cerebral creations.

More telling, perhaps, is the fact that under Spitznagel's reorganization and teaching of Math 320, a beginning-level statistics course, enrollment has jumped from a yearly average of fifteen students to nearly 300. He is known not only as the department expert on computers, but as an excellent teacher. McDowell estimates that Spitznagel's teaching brings some 500 students a year to the department. "He gives students instant feedback," explains the chairman, "and uses a very hands-on approach. Students start using a computer the second day of class."

The first day of class is no more routine. Typically reserved for a brief overview of the grading system and syllabus, Spitznagel instead has his students answer a lengthy questionnaire. He asks them all manner of questions—professional, political, and personal. From this mixed bag of statistical responses come such impertinent facts as: 46 percent intend to double major;



55 percent have traveled outside the United States; 64 percent favor development of the cruise missile; and 40 percent were in love at the time of the questionnaire. If these responses seem like answers to questions no one in mathematics should have bothered to ask, they are not. They are raw statistical data, the stuff of many classroom problems and projects to come. Random correlations and meaningful links are established. Students love it.

"I just don't think it would be much fun doing research if I couldn't communicate my work and my enthusiasm," Spitznagel says. From this man—who once worried about turning into a "crusty old graduate student," and presumably a crusty old professor—comes an appreciation for teaching gimmicks: a four-foot-long calculator he is constructing out of redwood and light-emitting diodes for teaching calculus, Rubik's cube for explaining group theory, a giant wall-sized TV screen for playing Hangman and Lunar Lander (for a popular one-time General Studies course, entitled Games Computers Play). Part of his genius is understanding that these things are more than gimmicks; they are imaginative, well-thought-out, straight-to-the-heart ways of delivering a difficult concept or of making a student think.

Several years ago, while involved in the reorganization of his department's calculus classes, Spitznagel was invited to work with the department of psychology on a study of math-learning patterns. Along with Professors David Weldon and John Stern, Spitznagel was to design and conduct an experiment on how students tackle math problems.

Their thesis was that people approach problems either visually—corresponding to right-brain dominance—or analytically—corresponding to left-brain dominance. Brain dominance was determined by watching the eye movements of subjects as they answered both visual problems (Which direction was Whistler's mother facing in the famous painting?) and analytical or conceptual problems (Why is Julius Caesar considered a great historical figure?). More than a hundred students were tested.

The researchers found about one-third of the subjects were visually oriented, one-third analytically oriented, and one-third in between. Although a final data analysis will be published sometime this winter, the study already has raised many questions. Most mathematics problems are presented with no particular orientation. Should a dominant right-brain professor be matched with a dominant right-brain

class? Is there a greater variety in dominance among men than women? Can brain-dominance studies shed light on math anxiety?

Spitznagel himself shows right-brain dominance, which means that his eyes move to the left during visual problems. On a recent afternoon, though, his eyes were simply moving slowly. He was tired. He had slept only two hours the night before because he was working out a lecture for one of two new courses he is teaching—Introduction to Computing and Data Processing for business students.

"Once I teach a course, I have a sort of videodisc in my mind that I can go back to," he explains. "But the first time around, I may spend five to ten hours on one lecture deciding how best to present the material."

Colleagues describe this behavior as pure Spitznagelian. Recounts McDowell, "He innovates a course, he teaches it a few times to get the bugs out, then he teaches someone else to teach it and moves on."

Back in midsummer, Spitznagel was in his office at Cupples I Hall enjoying a rare moment's pause. Tanned and grinning in the afterglow of a ten-day, one-man backpack trip in the Colorado Rockies, he pointed out that the development of categorical

The problem on the blackboard explains how to merge computer data A.B. and C. Where that happens. Spitznagel is often at the interface.

data analysis had zoomed in the last decade, most notably in health and medicine. Shoes kicked aside, he padded barefooted around the room searching for a report.

It looked to be a major task. Everywhere, on every desk, chair, and cabinet top were stacks of computer printouts, books, papers, magazines, and catalogs, the pink slips of old telephone messages poking through. In a few minutes, he found the report in a stack on the floor.

"I remember the first time I went to his office," says William Owens, professor of anesthesiology. "When the door opened, I was flabbergasted. I thought, 'What am I getting myself into?'"

A good thing, as it turned out. "I badly needed a statistician for the work I was doing," recalls Owens. "Ed is an exceedingly intelligent guy. Though we're both doing this in our spare time, there's no way I could have handled this type of research without him."

Together, they are establishing a data bank on 75,000 surgery patients, a project Owens began at Massachusetts General Hospital before coming to Washington University seven years ago. By examining various factors—the patient's age and initial condition, the form of anesthesia used, the success of the surgery, the postoperative condition, and the length of hospital stay—they hope to identify specific risks for individuals undergoing anesthesia.

"Most of what we do requires loads of computer printouts," says Owens. "Ed decides what is a valid statistical comparison and as a layman makes suggestions about the medical implications. I'm continually amazed at his inventiveness. There's really no stumbling block for him."

Have there been stumbling blocks? Well, reflects Spitznagel, at times he has had to use a less-than-optimal statistical tool, but when that happens, he has tried to seek another opinion. One of his satisfactions in his field is that all statistical problems ultimately have some sort of solution.

The size of a problem and the difficulty of reaching a solution do not seem to phase him. They never did. As a fourth-grade astronomy buff—in the days before pocket calculators—he converted a light-year into miles by multiplying miles per second by seconds per hour by twenty-four hours by 365.25 days (approximately 5,869,700,000,000 miles).

"I got tired of looking through a telescope," he remembers. "I thought I'd never understand what a light-year was until I had converted it into miles. I kept every digit, too."

Born and raised in Cincinnati, he was the elder of two boys. His brother, Carl, is a mathematics professor at John Carroll University in Cleveland. Ed sped through the algebra books in high school (books of another era, not yet "watered down by Madison Avenue") and began to teach himself calculus. By taking reading courses and written examinations in the summer, he was able to earn nine college credits. He graduated from Xavier University *summa cum laude* with a B.S. major in mathematics and minor in physics. In 1963 he received an M.S. degree and in 1965 the Ph.D. degree from the University of Chicago, which he attended as a National Science Foundation Fellow.

Shortly after joining the faculty of Northwestern University, Spitznagel filled out a brief résumé form in the back of a magazine called *Engineering Opportunities*. Following several offers, he decided to take a year's leave of absence from teaching to work for Litton Industries, a California conglomerate dealing in defense, industrial, and consumer goods.

"At that time, I was the purest of the pure mathematicians," he says. "I hadn't worked on practical problems since my undergraduate days. Since I taught a lot of engineering students, I thought it would be a good thing to be familiar with their uses of mathematics."

He worked at Litton for a year and two summers, joining Washington University at the end of that period.

Once here, he began spending regular hours at the University computing facilities. Eventually, he accumulated enough know-how to offer computer users "some fairly sophisticated 'come back and see me' type help."

To increase his work capacity by a factor of four or five, Spitznagel now keeps a Radio Shack color graphics computer and a Washington University computer terminal in his St. Louis county home. He and his wife, Alice, have four children. The oldest son, also named Edward, has been tagged by his second-grade classmates as "funny" and "smart in math." He already shows signs of becoming a computer enthusiast. The oldest daughter, Bridget, is more inclined toward things literary. A third-grade fan of Tolkien and C. S. Lewis, she first read *The Hobbit* cover to cover in kindergarten. When both children were learning to read as preschoolers, the Spitznagel household featured a word-of-the-day.

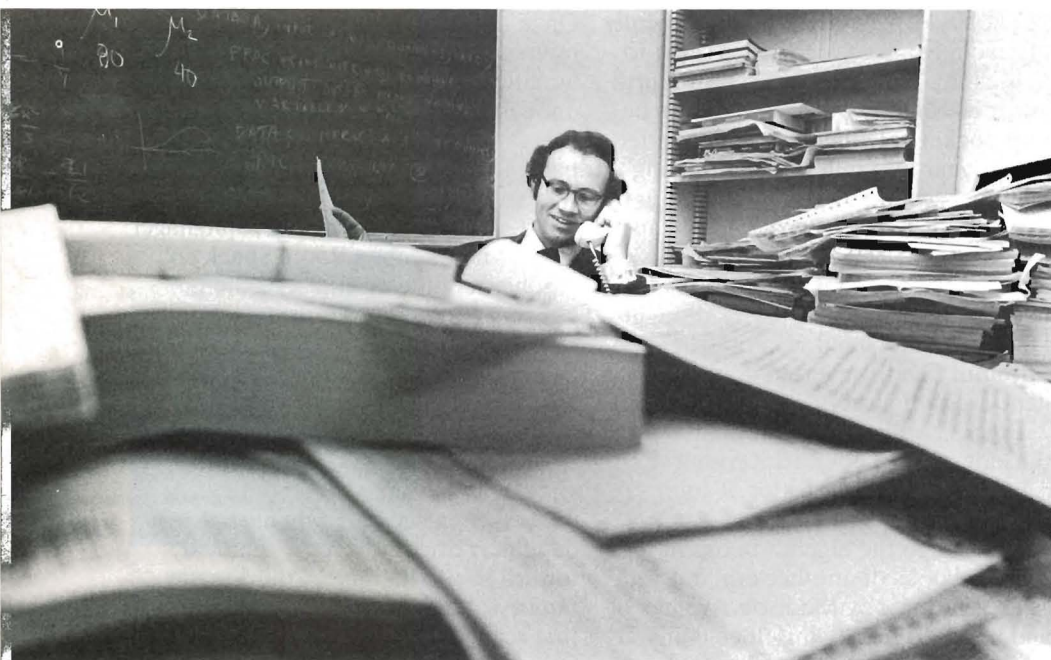
"He's a very patient man," remarks Gohagan, associate professor of engineering and applied science. "I suspect he's good with kids."

Gohagan is the main author of a forthcoming book, *Early Detection of Breast Cancer: Risk, Detection Protocols, and Therapeutic Implications*, that summarizes a five-year project funded by the Public Health Service. He, Spitznagel, and seven other scientists evaluated and improved screening protocols in collaboration with the National Breast Cancer Detection Demonstration Project at the Cancer Research Center in Columbia, Missouri. The study, which analyzed results from screening more than 10,000 women from 105 Missouri counties, is unique among hundreds at other cancer research centers in the country.

Although the various tests available to the women include physical examinations, thermography, x-rays, and biopsies, the question of when and in what order these should have been administered remained uncertain.



Spitznagelmania: Calculated Madness



According to Gohagan, "We found dozens of strategies. It's like tic-tac-toe. For every 'X' move your opponent makes, you have a whole array of 'O' moves possible."

As part of the project, Spitznagel invented a difficult computer program obtaining data on and ranking competing strategies for breast cancer detection and treatment. He dealt with them in terms of cost (both financial and psychological) and accuracy. The study did not produce a definitive treatment priority, but it did yield some important diagnostic guidelines.

Gohagan readily admits that studies like this will never computerize medical decision-making. Some decisions are simply too complex, he says. Still, decisions can be made less subjective. "Basically, we're moving operations research or decision analysis into medicine," he explains. "It's a whole new interdisciplinary field. In fact, it's a revolution."

Another medical study in which Spitznagel is involved comes from the department of psychiatry. Working with

Lee Robins, professor of sociology in psychiatry, and J. Phillip Miller, assistant professor of biostatistics in preventive medicine, he is analyzing data on the mental health of a community.

Usually, hospital records provide the only basis for estimating the prevalence of psychiatric disease in a general population. Hoping to get a more accurate picture, researchers are interviewing 3,000 St. Louisans at random about numerous symptoms of mental illness. The interviews are being carried out by the National Opinion Research Center. Similar studies are underway at Yale and Johns Hopkins Universities, with Duke University and the University of California at Los Angeles soon to follow. Spitznagel and Miller will deal with the St. Louis responses.

The two share many interests besides statistics. Both enjoy photography, the outdoors, church activities, and a general intrigue with how things work. "I don't think there's ever a *main* thing Ed is involved in," notes Miller. "Often it's difficult to determine which hat he's wearing when he's doing something. He really gets involved with the data and because of this, he is sought after."

Spitznagel agrees that he is not a statistician who stays only on the numbers side of a study. And in order to concentrate more fully, he teaches a double load in the fall to leave the spring semester wide open for research.

He also likes to approach problems all at once, often through analogies. Groups of data, for instance, may be visualized as overlapping curves, vectors, or bar graphs. A reading of how one group relates to another is taken by slicing through the overlap.

In reality, of course, the procedure is much more complicated. Numbers do not lie, but they can be misinterpreted or misused. Spitznagel compares the validity of statistics to a court trial. The same facts, handled by a good lawyer and a bad lawyer, can lead to different conclusions.

In a second comparison, he sometimes pictures a statistician like himself as the control-tower figure in an old aircraft movie, called upon to talk down a flustered pilot. Others describe him as a warm, low-key individual with a dry sense of humor and a computer-like memory—a man who never says "no" and never says "later." Suggests one person, "What the University really ought to do is double his salary, take away all his duties, and let him go around the campus doing whatever he wants."

If Spitznagel has an unfulfilled wish, though, it is to combine outdoor work with statistics. He finds data that call for analysis everywhere. For instance, someday he would like to try mapping wind currents by studying the corkscrew-like trunks of mountain-ridge trees. He believes the degree of twisting is a fossilized record of wind velocity that could be mathematically analyzed.

Meanwhile, he continues to teach and collaborate and generally busybody around the University at a pace and depth overwhelming to most. How does he do it?

"I don't know," offers a mystified colleague. "He just does all that. He just does it."

The Idolatry of Objectivity

By Norris K. Smith

Professor of Art and Archaeology

Last fall, freshman orientation spanned a weekend, so planners included religious services for several faiths. Professor Norris K. Smith, chairman of art and archaeology, delivered the "sermon" at an ecumenical service in Graham Chapel. That address carries an ethos so Smithian, to his former students it will be like once again sitting in front of his podium. His freshman listeners must have missed that. A pity.

This week I shall begin my twenty-sixth year at Washington University. Mind you, I have liked being here these past twenty-five years. I hold the University in high esteem. I hope that you will come to do so, and that you will remain with us for the next four years. Some of you may have wanted to go to Harvard instead; a few of you will transfer to other schools, seeking I don't know what. For my part, I am convinced that you will, or at least you can, get as good an education on this campus as on any other to which you might have gone or may later, however ill-advisedly, choose to go.

Nevertheless, I want to warn you, to put you on your guard against Washington University. The fact that you are here today indicates that you come to us with some measure of religious concern or commitment. Though I am reasonably sure that no member of the University faculty will ever directly attack your faith, such faith will be indirectly attacked, rendered suspect, whittled away at, in almost every class you will be attending for the next four years, just as it is challenged and eroded by our so-called technological civilization. I say "so-called" because in fact what makes us *civilized* rather than barbaric owes nothing whatsoever to technology or to the triumph of the physical sciences. I need not remind you that our worst outbreak of barbarism since Genghis Khan took place only forty years ago in the best-educated country in the West—the country with the largest number of Ph.D.s per square head.

It is precisely the triumphant success of the sciences, theoretical and applied, that has made their methodology, their aims, their ways of thinking, the model for most academic disciplines today. Scientific methodology is applied even in art history—an ill-conceived, misbegotten discipline that remains grievously blighted by its having emerged into academic respectability a hundred years ago as something the Germans still call *Kunstwissenschaft* (art science). Ours is the "science" of studying works of art in an objective way that aims at providing us with reliable knowledge about those works but that never invites us to take the work seriously, to believe that what the artist has avowed may not only be true, but may be something compellingly valid for our very lives.

The ideal of objectivity is associated with an understanding that is impersonal, that must not be shaped or colored by the unique personhood of the knower, for any such coloration would indicate bias



or prejudice. It would affirm the existence of some prior (and therefore limiting) conviction or commitment that would prevent the investigator from seeing the evidence with disinterested impartiality.

Let me propose that that quest for objectivity is idolatrous, and that that just *may* be what St. John had in mind when he concluded his First Epistle with the injunction, "Little children, keep yourselves from idols." Surely he was not warning against the actual use of images in Christian worship, for there was no danger of that among Christians of the first century.

The translators of the New English Bible have rendered the sentence, "My children, be on the watch for false gods." But I believe they have quite missed the point; for the falseness of idols does not lie in their depicting false, non-existent gods; rather, it lies in the presumptuous sin of affirming that deity can adequately be symbolized or "objectified" by some static, man-made three-dimensional *thing*. The word St. John used (if indeed he wrote the letter in Greek) is *eidolon*, the term from which our word "idol" is directly taken. In classical Greek *eidolon* simply meant an image, physical or mental. It did not mean "idol" in our negative sense of the word, for the notion of idolatry, the iniquitous worship of images, was quite foreign to Greek thought. Like the Egyptians before them, the Greeks made many images of their gods; they would not have understood the sense of the Mosaic prohibition against the practice. St. Paul uses the words *eidololatreia*, idolatry, and *eidololatrias*, idolatry; but these are apparently neologisms for expressing a Judeo-Christian idea. One does not find either word in the vocabularies of the Greek philosophers.

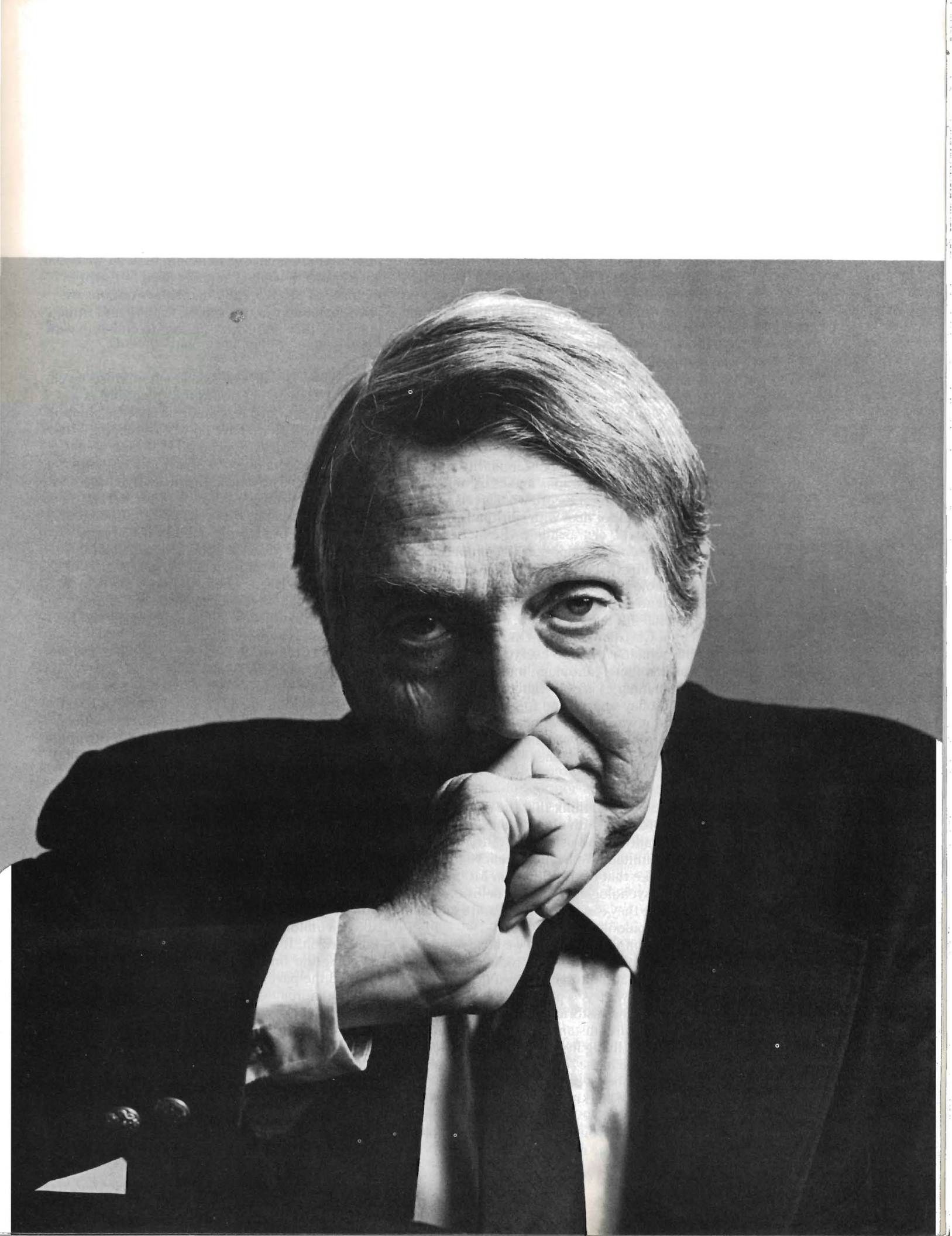
The word *eidolon* is closely related to a word of central importance in Plato—the term *eidos*, his favorite word for *form*. Plato believed that the forms or *eidei* exist eternally and constitute the true and immutable reality of which visible things are merely imperfect and ephemeral reflections. Along with *eidos*, Plato used the word *idéa* (idea). Both those terms, *eidos* and *idéa*, are derived from the word *eido*, an archaic verb meaning to see, but one that, oddly enough, was not used in the present tense. Its past tense, *oída* ("I have seen"), was used as a present-tense verb meaning "I know."

For the ancient Greek, as for the modern scientist or conscientious academic of almost any kind, knowing was essentially a matter of visual

apprehension, of looking and seeing. It was the kind of knowing gained by the spectator, the onlooker, the knower who thinks of himself as separate and apart from that which is known. That, I believe, is what St. John warns us against, as does Moses in the Second Commandment ("Thou shalt not make unto thee any graven image, or any likeness of any thing . . ."). It is a warning against both idols and ideas—against all those objectifying reductions, whether in the sculptured images of living beings or in the ideational formulations (those inventions that are so easily transformed into "ideologies"), by means of which we seek to reduce—to make objectively comprehensible and manageable—whatever may, in our ongoing encounter with ourselves, our fellow human beings, and the world around us, seem mysterious, transcendent, indefinable, unknowable.

Lest you think I am talking about some arcane philosophical abstraction, let me suggest that in our day the most insidiously idolatrous kind of image-making ever known is also the commonest—to wit, photography. I find the notion ineradicably fixed in my students' minds that a well-focused camera reveals to us the truth about things—what my very worst students refer to as "reality as it really is." In using that phrase they reject (or reveal total ignorance of) Plato's argument that a photographic image could be at best no more than a reductive imitation of mere appearances, two steps removed from the *eidei*, those real beings that cast only their shadows on the walls of the cave in which we mortal beings are imprisoned. The camera is widely thought to "see" with impartial accuracy, but in fact it cannot *see* at all; for seeing is not a matter of optical mechanics; it is rather a process that involves our whole mental and spiritual being.

Let me give a concrete illustration. In Exodus, chapter twenty-four, verses nine through eleven tell of how Moses, Aaron, Nadab, Abihu, and seventy of the elders of Israel ascended Mt. Sinai, and there they saw the God of Israel, with a pavement of sapphire under his feet. The experience was as vividly actual to them as the experience of eating and drinking: "They saw God, and they did eat and drink." We do not know, and no one in this life will ever know, what they saw that day on the mountaintop. Biblical writers are never visualistic; they do not describe appearances, nor give us interpretative ideas. However, we have been so conditioned by modern ways of thinking that as we read the story, we find it hard to resist two impulses, both reductive and undermining.



The first will be to say to ourselves, "Suppose someone had been there with a camera. What would he *really* have seen?" That is to say, suppose some uncommitted outsider had been there—some photographer from Associated Press, some anthropologist from Washington University, engaged in studying primitive religions of the Near East. Would he *really* have seen the God of Israel? Or did those seventy-four men merely "read into" their experience some mythical meaning? Or did they just lie about it all when they came down off the mountain?

I think that in good part, our familiarity with the camera and with photographs makes us think this way. The camera cannot record what is visionary or miraculous; it cannot deal with spiritually transcendent or ecstatic or transfiguring experiences, nor with their demonic opposites. It cannot discern the high meaning that may lie behind appearances. If some photojournalist had photographed Christ's crucifixion and written it up as a current event for the Jerusalem Times-Dispatch, would there ever have been a Christian church? One photograph would have made it plain to everyone that the event was completely ordinary, matter-of-fact, as empty of meaning as is everything else that is reported in today's paper and forgotten by tomorrow. But it was not the appearance of the objects that mattered; it was the words that were spoken, had been spoken, and would later be spoken.

Once we begin to think that the camera records the truth about things, its drastic limitations lead us to believe that we too are similarly limited. We begin to believe that experiences like that of the elders on Mt. Sinai are merely "psychological," merely delusions in the mind, since they cannot be tested and examined by indifferent onlookers.

The second impulse to which we academic idolaters are tempted is to try to reduce the experience on that mountaintop to a manageable *idea*. To do this, we try to put the phenomenon into its cultural and historical context, to see it as a product of the circumstantial conditioning undergone by virtue of living in Egypt in that particular age or at that stage in the "evolution" of civilization. Having spent the best years of my life in an academic milieu, I find it easy to succumb to that temptation; it's what we academics specialize in doing. Let me show you how it is done. It involves gathering together the miscellaneous bits of

information we have (a millionth of what we could have known if we had actually lived in Egypt in the time of Moses), the fragmentary notions we have gleaned from this source or that, and fitting them together into a new pattern to come up with a new *idea*.

Now in fact no one knows when Moses lived. Though in Exodus the "pharaoh" is mentioned repeatedly, a specific pharaoh is not named, so we have no way of relating Moses to Egyptian history in general. However, some forty years ago, in his book *Moses and Monotheism*, Sigmund Freud advanced the thesis that Moses was an Egyptian prince, a follower of the heretic pharaoh Akhnaton, who reigned in the second quarter of the fourteenth century B.C. Freud proposed that Moses and his followers had left Egypt during the subsequent period (shortly after the year 1350 B.C.), when Akhnaton's religious reforms, which were monotheistic and highly ethical in nature, were being suppressed and his memory all but obliterated. We know that Akhnaton's reform stressed the worship of the one god, Aten, who was symbolized by the disc of the sun and by long rays of light, each ending in a caressing human hand. From the Book of Exodus we gather that Moses's followers carried with them into the wilderness a good deal of Egyptian "culture"—witness the making of a golden calf, a thoroughly Egyptian animal-symbol of deity. Aaron had permitted the image to be made, but Moses destroyed it, just as Akhnaton had tried in Egypt to eliminate anthropomorphic and zoomorphic conceptions of the divine. So what did Moses and the elders really see? Why, merely something that I myself have seen two or three times in my lifetime and that many of you have probably seen: they saw the disc of the sun rising above a uniform cloud cover that stretched away to the horizon. It was only that plane of clouds, catching the first rays of the rising sun, that constituted the pavement of sapphire. Only that, nothing more.

One might say that it was idolatrous for Akhnaton to worship the disc of the sun and to have many images made that showed him and his family adoring the disc and its beneficent rays; but far more corrupting is my reductive *idea* that explains away the visionary experience, reducing it, on the one hand, to a cultural phenomenon in the history of Egyptian and Near-Eastern religion and, on the other, to something that could have been

photographed. Such is the kind of analytical and explanatory thought that universities are devoted to.

How much better to admit, with St. Paul, that now we see through a glass darkly—that is to say, through a dull and tarnished mirror—that now we know, can know, and need to know only in part.

One of my favorite writers on these matters is Walter J. Ong, professor of English at St. Louis University. Let me quote him: "The greatest shift in the way of conceiving knowledge between the ancient and the modern world takes place in the movement from a pole where knowledge is conceived in terms of discourse and hearing and persons, to one where it is conceived in terms of observation and sight and objects. This shift dominates all others in Western intellectual history. [Let me observe parenthetically that I believe Father Ong errs in the way he expressed the polarity. The difference, I would say, is not so much between ancient and modern thought as between Hebrew thought and Greek; for it is Greek analytical thinking that predominates in modern universities and in modern science.]

"The new world of science was a world of objects as nothing before had ever been.... In this sense, object is opposed not to subject, but to person. Inasmuch as the world of science is a world of objects, which are exteriorities or surfaces, it is not a world of persons, or interiorities manifesting themselves by a word. For even in this sublunar world, sound or voice comes from the interior of things, not so as to exteriorize this interior but to enable it to communicate with other interiors. Little wonder that in the post-Newtonian object-world, God's voice, too, is silenced, that revelation becomes meaningless, and that the Creator becomes no more than a kind of mechanical brain. You need no person to run a machine. But you need a person to utter a word. You need a person also to elicit an act of faith; for there is no way to believe, or believe 'in,' an object."

Remember always that Old Testament thought, and therefore the essential underpinning of both Judaism and Christianity, derives from a specific revolt against technological objectivity. The ancient Egyptians were the first people to discover what feats could be accomplished by objective calculation and organization—by harnessing the Nile, harnessing magical forces, and harnessing men to do things we still find astounding. Only during the past hundred years has anyone managed

to build anything taller or more massive than the Great Pyramid of Khufu. We marvel that they did it all without machines—but, of course, they did not, for men were treated as machines, as units of manpower that could be brought to bear upon the objective task of moving six and a half million tons of stone into the form of one of the most durable and striking *objects* ever created by man. The Egyptian order of things was static, impersonal, systematic, and enormously productive, providing more security and abundance than any society had ever known before or perhaps has ever known since. (We may, today, enjoy greater abundance, but certainly not greater security.) Yet Moses believed that there was something immeasurably more important than material abundance, something having to do with persons rather than things, with righteousness rather than efficiency, with ethical integrity rather than with productivity. Since he was powerless to change the Egyptian order, even though he had been reared in the pharaoh's palace, he gathered around him a company of like-minded believers and fled into the wilderness. There he spent the rest of his life, having renounced all the material and social advantages he had enjoyed as a prince of the royal household.

As you must have perceived by now, I am persuaded that we find ourselves in a thoroughly Egyptoid situation. Yet plainly we cannot pack up our portable belongings and set out for some Promised Land about as far away as Little Rock is from St. Louis. We have to face living with all the products of the new objectivity—with jet planes, autos, TV sets, shopping centers, laboratories, computers, research—resisting as best we can the temptation to regard such things as being indicative of the ultimately true nature of either ourselves or the universe.

At Washington University, no less than at Harvard and Yale, you will be continually invited to adopt the position of the impartial, impersonal, and uncommitted observer. Be on your guard against Egypt and the Egyptians. Remember that we are persons, spiritual beings who speak and respond to one another, seeking to establish community, a loving and caring participation with one another. We are not objects to be counted and measured and tested and experimented with. We should be seeking wisdom, not merely factual and instrumental knowledge. Keep yourselves from that idolatry.

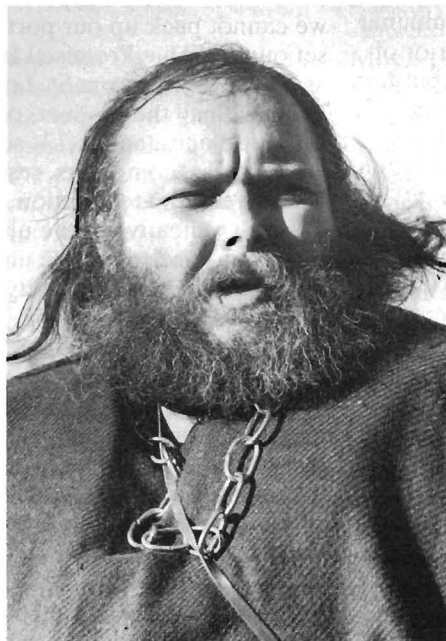


CREATIVE ANACHRONISM

By Charles Koltz



Anachronism is forever. Members of the Society for Creative Anachronism turn back the clock to when knighthood was in flower. Above, knights errant (from left) Robert of Grandloch (James Stewart), Jason D'Westershire (Jay C. Stewart), Brown Blackhand (Jim Fleming, Jr.), and Gwendolyn bro Owen (Carol Robinson). At right, warrior Cormac O'Sullivan (Marty Connolly)



"Give me a fulcrum and a lever long enough," said the Greek mathematician Archimedes, "and I will move the world." In this respect—moving the world—Archimedes must bow to a curious collection of merrie folk called the Society for Creative Anachronism, which has found enough leverage in the lore of the Middle Ages to move the world back ten centuries.

Each Thursday night within the stone walls of Bear's Haven—Washington University in St. Louis—local society members forsake their mundane dress and don the cloaks, tights, tunics, capes, gowns, and indeed, personas of a time when knighthood was in flower and chivalry in bloom. Their meetings—given over to the national society (which boasts 5,000 members) goal of "recreation of the Middle Ages as they were and as they might have been"—are living theater. The society is not aimed at historical accuracy; its members take what they want from the past and slide it effortlessly through a mental time warp into the twentieth century. The only stipulation is that dress must attempt to be pre-sixteenth century.

At a Bear's Haven meeting, most are dressed in a style worthy of a medieval court, or at least an Andy Warhol party. Many costumes look authentic, notwithstanding the preponderance of name-brand sneakers, Top-Siders, Hushpuppies, and other out-of-step-with-auld-lang-syne footwear. (Period shoes must be a problem.)

Spoon liberally into this medieval melange generous portions of lordly language, a spirited game of chess, one Rubik's cube, a few lusty swills of mead and cider, a gaggle of calculators put to use on homework problems, a set of courtly procedures, and a brace of royal rulers, and you have a typical Bear's Haven meeting.

Harald of Bear's Haven, alias Nathan Schroeder, an engineering senior from St. Louis and founder of the WU group, recalls, "When I first attended one of these gatherings, I said to myself 'These

are the kind of people I'd like to be friends with.' One thing I like is the environment of respect for others, the courtesy. It seems often absent in the Mundane Worlds."

"Has courtesy become an anachronism?" the good Harald is asked.

"Apparently," he answers with the irony of a true anachronist, "unless only anachronists have preserved it."

Harald's mundane persona boasts no mean legend itself. Disguised as a mild-mannered math genius, Harald has been an important member of the Washington University team that has won, or placed second, in the prestigious Putnam national math competition. He has also been a part of the university's nationally placed computer science team. Quite on his own, Harald set an unofficial regional record by solving Rubik's cube in less than two minutes.

In the world of anachronism, Harald serves as head of the house at Bear's Haven, leader of twenty-five University students who play host to the local society. That group, however, includes anachronists from throughout the St. Louis area.

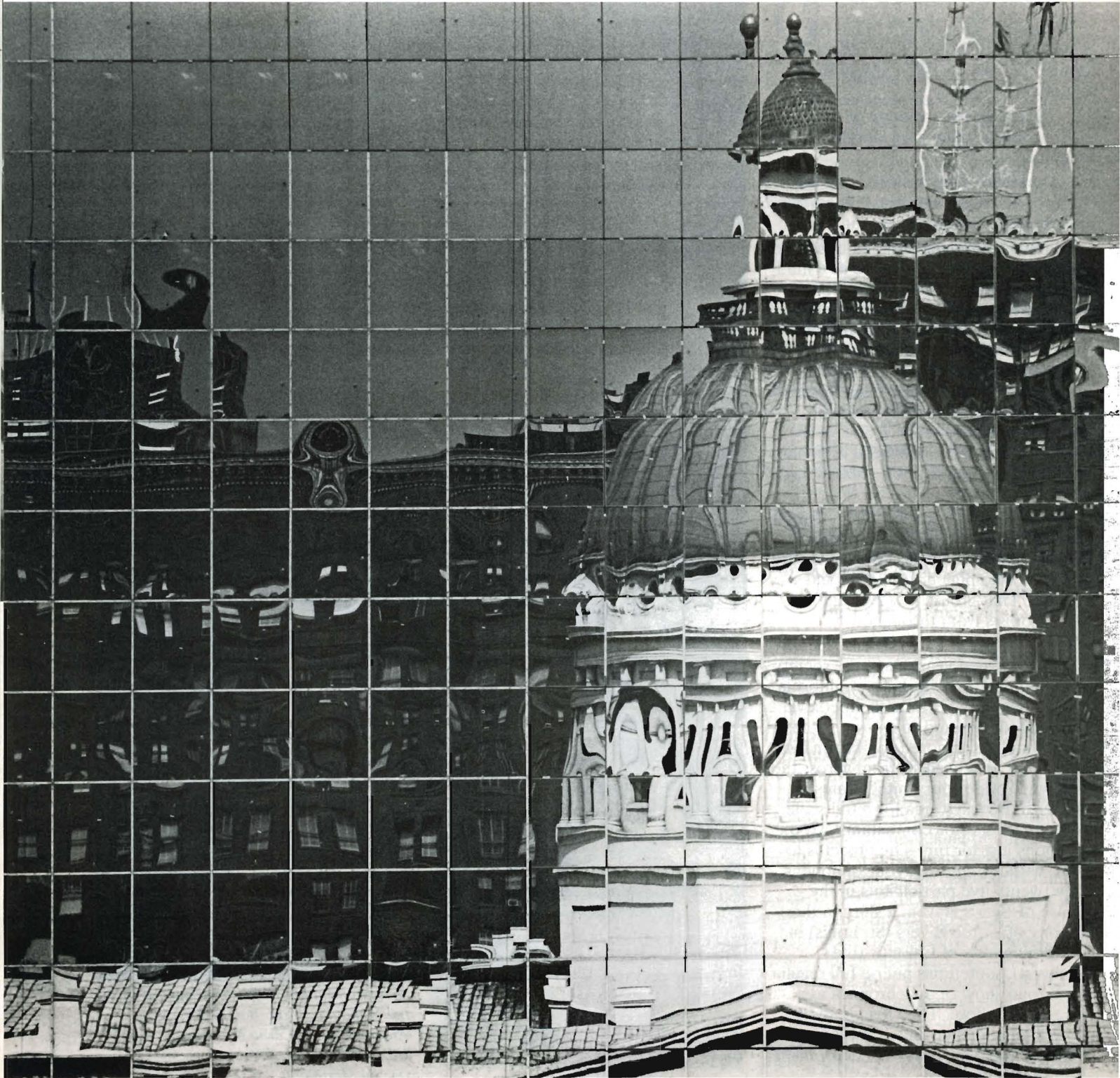
In the sixteen years since the society was conjured up in Berkeley, California, its hallmark has become the medieval tournament devoted to its own sophisticated style of armored combat on foot. Each year anachronists from across the Known Worlde (the United States) gather in Pennsylvania for a full-scale war, but most often combatants "lay on" weapons just for fun. The object is to best, without injuring, your opponent. The twenty-five participants in the house of Bear's Haven, a shire in the Barony of Three Rivers (St. Louis) in the Principality of Calontir (the Midwest), sometimes put on full regalia for a road show of anachronism at a local high school. They love it and so does their audience, but in WU's Gothic halls the main purpose of anachronism is pure escape.

Fighting, with due courtesy and honor, is a favorite anachronist pastime. Grandloch takes the offensive against O'Sullivan.



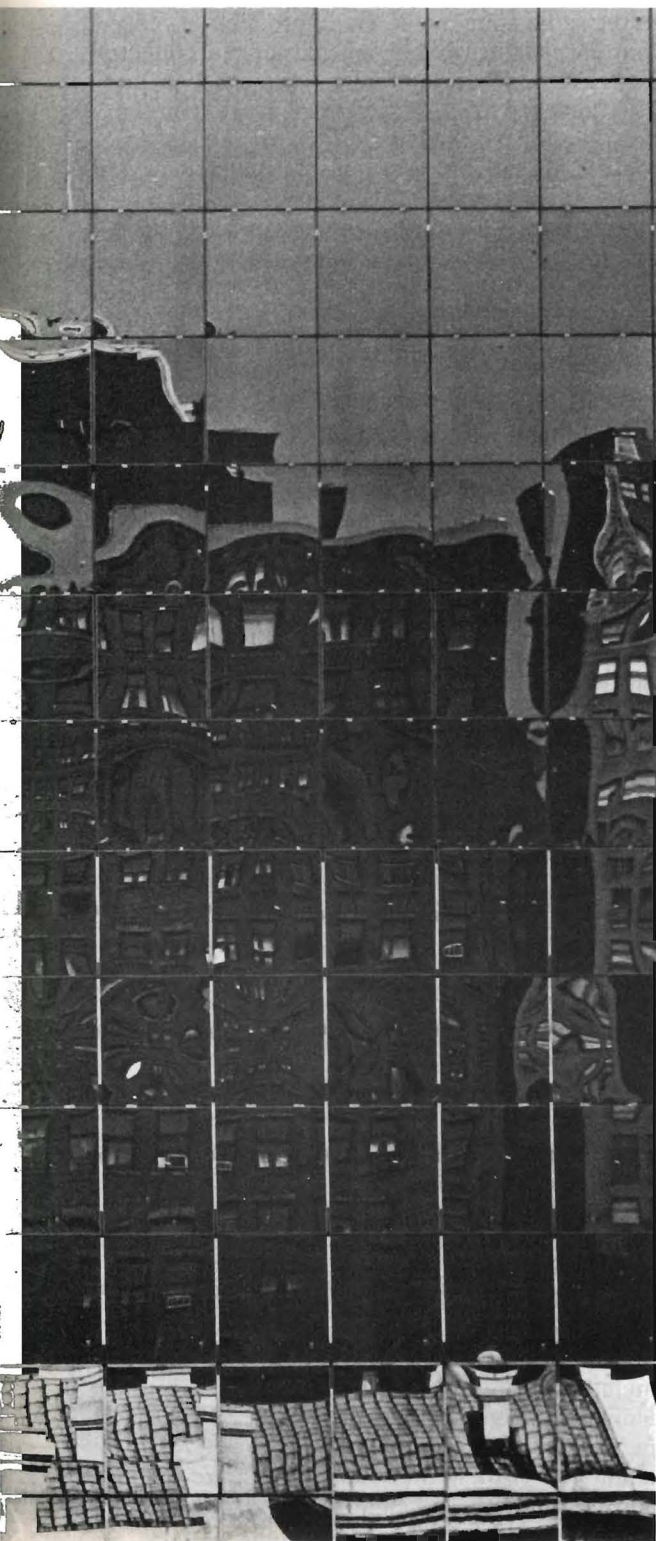
Anachronism is a call to arms against the mundane world. Baroness Arwyn Antarae (Susan Carna Mattingly) with escort Chepe L'Oragere (David Mattingly)

The name HOK is identified with architecture, design, and planning just as NASA is with space science. It was coined in 1955 when three alumni created Hellmuth, Obata & Kassabaum, a firm now internationally renowned.



h+k

By Dorothy H. Brockhoff



The graceful Greek Revival Old Courthouse has been an impressive St. Louis riverfront landmark ever since architect William Rumbold topped it with a lofty cast iron dome in 1859, but, today, framed by the silver Saarinen arch and flanked by two sleek skyscrapers completed in the 1970s, it has a kind of picture postcard beauty that even its creators could never have imagined. Glistening in the sunshine with its shimmering image reflected on the mirror-like skin of one of these towers, this historic structure has a splendor in the glass precisely as the designer of the contemporary spires intended.

Describing this vision as "unsurpassed drama," Ada Louise Huxtable, the noted architectural critic of the *New York Times*, has observed that these "two (recent) buildings... both by Hellmuth, Obata & Kassabaum, Inc., make the first real attempt to relate to their surroundings and to suggest human use" in the St. Louis levee vicinity. This compliment from the outspoken author of *Have You Kicked a Building Lately?* to HOK, the working name of this St. Louis-based firm founded by three Washington University alumni, is high praise indeed, for on her 1976 St. Louis riverfront visit she liked little else.

Were she to return perhaps she might temper her judgment, for downtown St. Louis has since experienced something of a building boom. What delighted her most at the time was the division of these soaring highrises "into larger and smaller units, facing the Old Courthouse with the lower cornice-height sections." But what dazzles nearly everyone else is the breathtaking sight of the exquisitely proportioned courthouse and its neighbor, the Boatmen's Tower, reproduced with rippling effect on the surface of the Equitable Building. It is curious that Huxtable chose not to write of this, for elsewhere she has stated, "The wall is the sleeper of the environment."

Gyo Obata, at fifty-eight the youngest of the HOK founding partners and the designer of the trio, agrees. Looking out of the Boatmen's Tower at the refractions dancing on its counterpart to the south, Obata observed, "The whole basis of the Equitable Building was to be a good neighbor to the Old Courthouse. That's why I wanted to use reflective glass—to make it blend with the sky and mirror the Old Courthouse." Reminiscing about this dramatic juxtaposition, Obata was reminded of an article Suzannah Lessard wrote for the *New Yorker* a few years ago. "She

asked a great many architects what they thought of glass buildings. Most of them, oddly enough, told her they use glass simply because they like it and not because of its reflective quality. That seemed strange to me." Then, almost as an afterthought, he said, "This was one of the earliest uses of mirrored glass."

HOK moved into the Boatmen's Tower when the twenty-two-story building was completed in 1976. Obata and George E. Kassabaum's adjoining offices are on what is officially the top floor; one discounts a mezzanine above, now occupied by a clutch of HOK architects and engineers who seem to revel in the aerie's informal ambiance. George F. Hellmuth is on the twentieth floor in a corner suite



George F. Hellmuth, a second-generation architect, has been described as one of the greatest salesmen ever born.

which affords him a good view of the International Fur Exchange designed by his father and uncle, partners in Hellmuth & Hellmuth.

The furnishings of their working spaces reflect their personalities. Obata labors at a blonde oak table littered with drawings and other accouterments of his profession. Metal, high-tech shelves cover the east wall, while samples of building materials tilt against the opposite side of the room. The clutter is misleading—Obata can and does retrieve anything with unerring aim.

Kassabaum's quarters radiate an aura of polished decorum and organization. He sits at an oval marble table which looks as if it had been deliberately cleared for action. Needed papers are stacked in tidy piles on a shelf behind him. Over this counter hang three dramatic pink and silver serigraphs by the American artist Sven Lukin. Near the entrance to his spacious office is a tall, graceful Bertoia sculpture of what looks like piano wires. It reminds Virginia Miller, his secretary of twenty years, of a sheaf of wheat plucked from the fields of Kassabaum's native Kansas.

Hellmuth presides over the same kind of marble table, but the rest of his furnishings are traditional.

An entire wall is covered with framed pictures, photographs, and diplomas including one from the École des Beaux Arts, Fontainebleau, France, dated 1931. Asked what he learned there, Hellmuth, a candid man with a slightly ribald sense of humor, retorted with mischievous relish, "I found out that I was as good as the guys from schools like Harvard, Princeton, and Yale. That's all I needed to know!"

In taste and temperament these three differ radically, but they share a common commitment to quality. They also, of course, owe their allegiance to the same alma mater. Hellmuth, now seventy-four, earned the bachelor and master of architecture degrees from Washington University in 1928 and 1931, respectively. A gifted student, he won the prestigious J. H. Steedman Traveling Fellowship to study abroad. Kassabaum, sixty-one, received his architectural degree in 1947, then joined the faculty for four years. Obata, who was born in San Francisco, was forced to leave California during the anti-Japanese hysteria of World War II. He remembers gratefully that Washington University, which he credits with a proud liberal tradition, was one of the few in the Midwest to accept Japanese-American students. He graduated with a degree in architecture in 1945 and a scholarship to the Cranbrook Academy of Art in Bloomfield Hills, Michigan. As a student of Eliel Saarinen, father of Eero Saarinen, architect of the Gateway Arch, Obata received the master's degree there in 1946.

Construction of the three-vaulted, thin-shell St. Louis Municipal Airport (now known as Lambert-St. Louis International Airport) brought the trio together. In 1949, after ten years with Smith, Hinchman & Grylls of Detroit, Hellmuth and two colleagues, Minoru Yamasaki and Joseph Leinweber, set up a practice in St. Louis and Detroit. Hellmuth, once employed as a junior architect by the City of St. Louis, landed the air terminal project through his long-standing professional contacts with local officials. He handled affairs in St. Louis; his partners in Detroit. Gyo Obata and George Kassabaum joined Hellmuth's St. Louis office in 1951.

By 1955, the Detroit-St. Louis operation had become unwieldy, and the partners split. Hellmuth, Obata, and Kassabaum formed a new firm.

HOK celebrated its twenty-fifth anniversary in July 1980 with the release of 500 balloons and the publication of a brief, conservative *Chronolog*. It reviewed the projects of HOK, now identified as architects, engineers, and planners, and recounted its growth from twenty-eight employees to a leading architectural/engineering firm with committed work in construction totalling \$4.5 billion.

Currently, HOK has more than 800 employees including more than 100 trained at Washington University. Ten of its nineteen officers and board members are University alumni. Some 370 of its employees work in St. Louis; the rest are scattered across the country at eight regional offices established in San Francisco (1966), Dallas (1971),

New York (1972), Washington, D.C., (1973), Houston (1979), San Diego (1980), and Denver (1981). It also has a unit at Riyadh, Saudi Arabia.

Although HOK's growth has been rapid, it has not been unstructured. In 1961, after being selected to design a California laboratory for IBM, HOK learned that it had almost not been considered because it was too small. "It was then," Kassabaum recalled, "that we developed a master plan for growth. The curse of architecture as a business is its peaks and valleys. We decided to avoid that by expanding in service and geography." Today, HOK's professional staff encompasses twenty-six disciplines offering comprehensive services in architecture, interior design, planning, engineering, industrial services, program management, and graphic design.

Over the years, HOK has earned recognition for its many achievements and has received sixty-six awards for its work including the AIA Award for Excellence in Architecture from the Central States Region in 1979 for the Boatmen's Tower in St. Louis. In preparing the entry for a recent competition, Obata deftly summarized HOK's philosophical premise, observing: "... (Our purpose) is to solve problems concerning the space needs of people. Solutions must not only meet the functional requirements of owners and users, but must go beyond pure function to provide spaces that will enrich the lives of their occupants."

Its accomplishments are attributable to its organizational structure. From the beginning, HOK has functioned as a team with operations divided into three basic areas, each managed by a founding partner. Hellmuth's responsibility was to secure new business, Obata's to design, and Kassabaum's to direct each project to completion. Reminiscing about this separation of powers, Kassabaum observed, "HOK was formed on the basic principle of three equal and separate (and I want to stress the word equal) divisions of work."

In this triumvirate, Hellmuth's contribution has sometimes been oversimplified as "supersalesman." The booster who brought in the new business, he is also credited with having been the development brain. King Graf, who heads HOK's two Texas offices and today is executive vice president in charge of new business—now that Hellmuth is chairman of a separate corporation, HOK-International, Inc.—explains, "George Hellmuth was able to attract clients' attention. He had an extraordinary ability to communicate exactly what HOK could do. In effect, long before the term 'marketing' was a buzz word, he performed that role." Hellmuth, the most candid and idiosyncratic of the founders, sometimes impressed newly hired architects as a bit of a curmudgeon, but beneath the facade they found a man of rare sensitivity. An employee once confided, "I once made a big mistake—I infuriated a client. George Hellmuth took me aside, and instead of giving me the boot, he gave me advice."

Graf, a keen observer, said of Obata, "Gyo is content to concentrate his energies on conceptualizing the architectural requirements of a client to produce exquisite design solutions for them. He quickly emerged as an extremely brilliant and talented designer."

Obata, who obviously delights in his work, declared: "It's been a very, very rewarding experience to be a designer. I am constantly challenged by new ideas and ways to look at things. Each project provides an opportunity for continual rejuvenation. It's like Zen, I think, where you really try to understand and then it comes."

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Gyo Obata, HOK's chief designer, is frequently called an architectural genius.



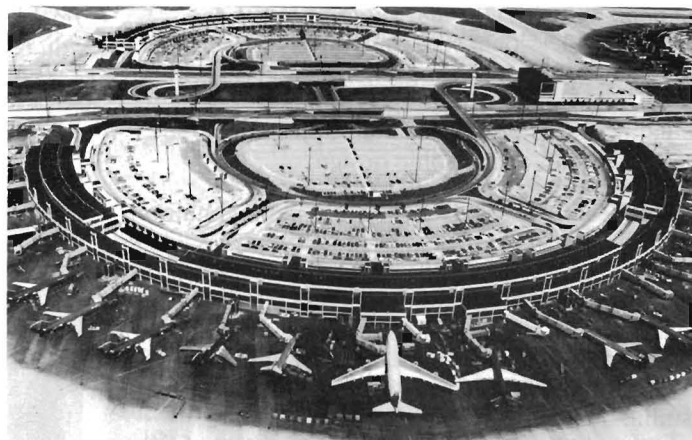
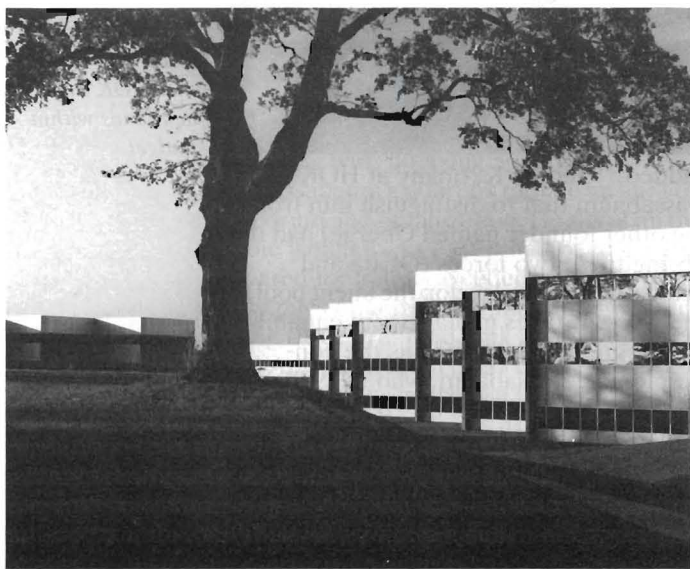
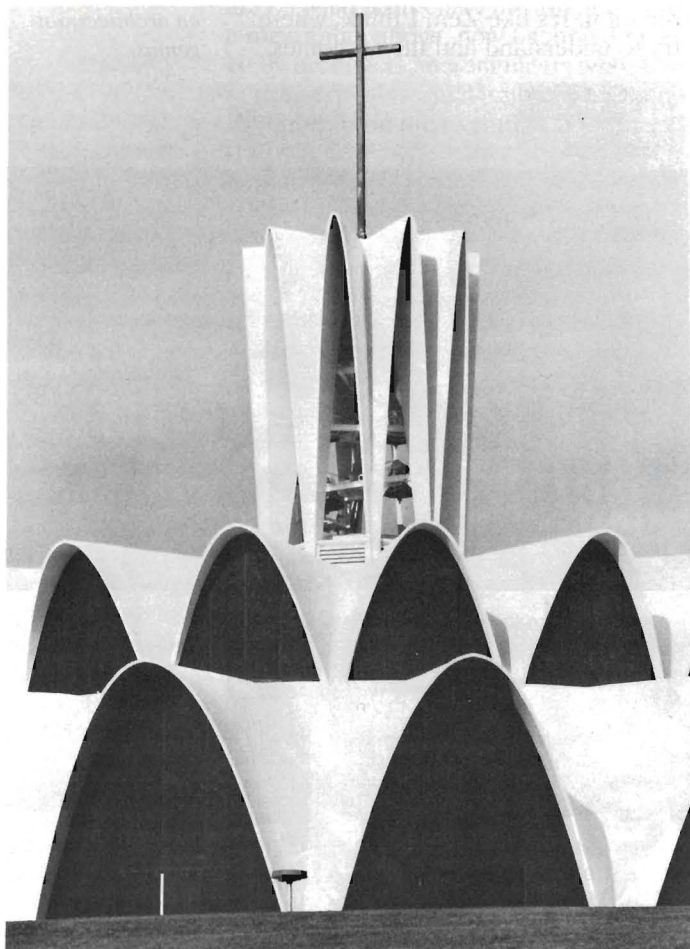
George E. Kassabaum is the force who assures that HOK meets deadlines within budget.

Graf added, "George K. (many at HOK call Kassabaum that to distinguish him from the other founder named George) had the ability to bring these two forces (Obata and Hellmuth) together and to develop the talent pool to execute the work. It takes management capability to do that." Frequently described as the consummate diplomat, Kassabaum, who in 1978 was named Missouri's Architect of the Year, could qualify as "Mr. AIA." After heading the St. Louis chapter, he served as national president and later as Chancellor of its College of Fellows. To be a fellow is an honor that gives an architect the right to add the initials FAIA to his or her name.

The Priory Chapel in St. Louis County is an award winner. Each arch level of its thin concrete shell expresses a function of the church.

McDonnell Douglas Automation Company (bottom left), located near McDonnell Douglas world headquarters in north St. Louis County, was completed last year.

The Dallas-Fort Worth Airport developed from a whole range of movement studies. Its design consists of a series of loop-shaped terminals linked by a spine road.

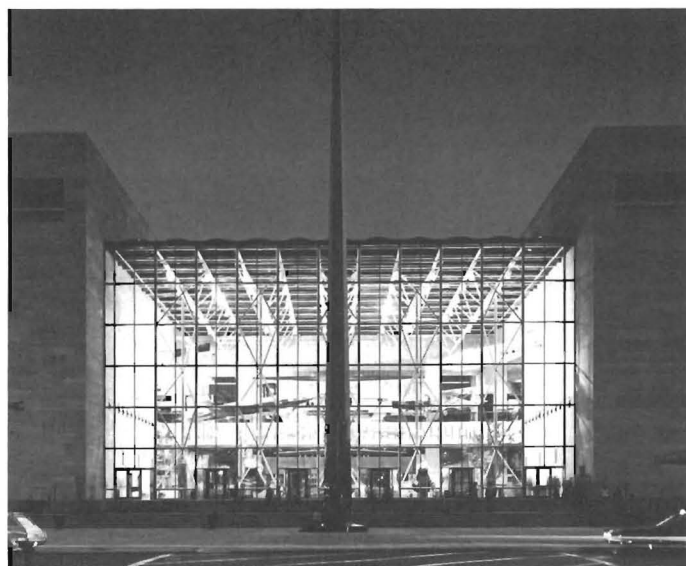


Houston's Galleria shopping complex (below) has become an entertainment center and tourist attraction complete with a glass-covered skating rink.

HOK silhouetted the Mobil Oil U.S. Division headquarters (bottom left) on a sylvan site in Fairfax, Virginia. The structure was completed in 1980.

The National Air and Space Museum displays sixty-four suspended, authentic airplanes and 100 spacecraft. Yet Obata's design featuring a transparent plastic canopy makes it seem spacious.

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It is a distinction also accorded Obata and Hellmuth, although the senior of the three likes to joke that he "had to wait until George K. headed the fellows to be chosen." Hellmuth delights in such hyperbole.

Asked why the mix of these founders resulted in a firm of architects/engineers which, according to a *Building Design and Construction* 1981 survey, ranks among the top five with an estimated \$32.6 million in billings, Graf paused reflectively, then said: "Each of them is a real and distinct professional and personality who complements the others. Equally important, all three quest for excellence."

Commitment to the philosophy which Obata underscores has also been crucial. Kassabaum expanded on this principle: "We don't see ourselves as design architects going off into the garret and creating something. That just doesn't work. There has to be a close interchange of ideas and information with a user or owner before the best building can be built. Remember, architects can't build better buildings than the owner will let them build."

In stressing this Obata has said, "We don't approach a building with a preconceived notion. We study the site, the light, the way the client needs to have people move through the building. Now energy considerations play a large part in building design. We work from the inside out, and the final form is determined by the functional needs of the client."

"I think that this dialogue between client and architect is tremendously important. Our strength has been that we listen a great deal. I don't believe in any one style, nor do I have any one kind of look in my design."

Peter Blake and Bernard Quint, knowledgeable architecture watchers, perceive a Chicago Bauhaus influence in Obata's design and maintain, "though he was never a student of Gropius (one of the fathers of the German Bauhaus movement who fled to the United States during the thirties), his work clearly owes a great deal to the functional movement that originated at Harvard." Obata would not deny his debt to this heritage, nor to the artistic tradition of his family that can be traced back fifteen generations. He is enormously proud of the latter influence and presents as proof two booklets. One is a catalogue of the California artwork of his late father, Chirua Obata. The senior Obata moved to San Francisco in 1903 and taught art at the University of California, Berkeley. The other is *Japanese Flower Arrangement*, a handbook with comment by his mother, Haruko Obata, and illustrations by his father. At eighty-nine she continues to teach this ancient art.

But Gyo Obata is his own man, and his independent spirit is clearly reflected in his oeuvre. He is impatient with architects who are preoccupied with putting a Beaux Arts facade on contemporary buildings. Convinced that much of the so-called post-Modernism is a reaction to the straight,

sterile buildings predominant in this century, Obata insists that architecture cannot solve its problems by looking backward. "We can learn from the past, but to use it as a kind of dress for a building is, I think, quite wrong."

Just as there is no one HOK look, so there is no preoccupation with specialization. HOK's history is one of diverse building types: corporate facilities, office buildings, mixed-use developments, shopping centers, hotels, educational facilities, libraries, public buildings, health-care facilities, criminal-justice facilities, housing, and renovation projects.

Design philosophy was not the only criterion responsible for HOK's diversity. Hellmuth, who drew up a comprehensive business plan in 1944, ten years before HOK was established, has always insisted that "to hold a stable practice, the architect must handle different kinds of work and not commit the error of concentrating on one area." He also maintained that "the architect must include among his consultants expertises beyond pure architecture and engineering." Hellmuth, whose family has been in St. Louis since before the Civil War, grew up in a house full of architects and seeing his family too narrowly tied to one kind of practice has haunted him. He sought a broad-based firm of at least 150 employees. "You need a team of brains, not bodies, and with proper management, this can give you a total that exceeds the sum of its parts."

HOK's first objective was to build recognition from its St. Louis headquarters. "We started out doing schools," Obata recalled. One of the firm's earliest projects was the Bristol Elementary School which won several prizes including a nationwide competition for better school design. Kassabaum is especially fond of this HOK period because in its midst the firm completed the Warson Woods School, which his children attended. "I happen to think it is a very nice building, but perhaps my feelings have as much to do with sentiment as with architecture," he said.

In reminiscing about those days, Obata told a reporter "the project that gave us leads into a number of other areas" was the Preparatory School and Priory Chapel of St. Mary and St. Louis, known simply as the Priory. Hellmuth suggested that the client—the Order of St. Benedict, which was then celebrating its 1500th birthday—follow the precedent of the Catholic Church, which once led in the design of ecclesiastical buildings. The result was what George McCue, in *The Building Art in St. Louis: Two Centuries*, describes as a circular structure "which rises like a triple fountain of white, thin-shell arches above a high site north of Highway 40" in west St. Louis county. In the sixties, some considered it a radical design.

The firm went on to college work and over the years has done facilities for some forty educational institutions including Washington University, where it designed the residence halls on the South

Forty. Currently, HOK is the architect for the \$50 million Clinical Sciences Building, the most costly structure ever erected at the Washington University Medical Center.

The ties between HOK and the University are numerous. Emulating Kassabaum's early example, Obata and others at HOK have taught at the School of Architecture, but only on a part-time basis. HOK in turn has, at various intervals, numbered among its staff the present dean of the School of Architecture, Constantine Michaelides, who worked there briefly in 1962; Joseph Passonneau, who came to St. Louis specifically to take a job at the firm in 1954 and subsequently resigned to become dean; and George Anselevicius, who dropped his affiliation with the firm after succeeding Passonneau as dean. Last April, HOK's board agreed to contribute an annual \$2,500 scholarship to the School of Architecture. Kassabaum is also a University trustee.

As its fame as a designer of educational buildings spread, HOK began work outside this region. Stanford University asked HOK to do its main library on condition that it open a San Francisco office. "That gave us an opportunity to grow in another market area," Obata recalled. "We have continued to open regional offices, each with the specific goal of becoming the best in a locality."

Gradually, too, HOK became internationally recognized, establishing a solid base in the Caribbean and then completing a string of correctional projects across Canada and Hawaii. More recently, it has moved into the Middle East. *Engineering News Record* noted in November 1976: "At drafting tables continents apart, hundreds of architects are working to make an Arabian dream come true. They are one of the largest design teams ever assembled, an international consortium called HOK + 4. Their task is to design the single largest building project in the world, a multibillion dollar University of Riyadh on a 2,400-acre site in the Saudi Arabian desert. All design work is being directed by Hellmuth, Obata & Kassabaum, Inc. Other members of HOK + 4 are Dames & Moore, Los Angeles; Caudill, Rowlett, Scott, Houston; Gollins, Melvin, Ward Partnership, London; and Syska & Hennessy, Inc., New York City."

The \$3 billion complex, on the outskirts of dusty Riyadh, capital of Saudi Arabia, will have some ten million square feet of teaching space, more than Harvard. Hellmuth, whose foreign contacts helped HOK become project leader, estimates that he has made forty trips to the Near East. HOK's graphics department (believed to be the largest attached to an architectural firm in this country) bound its two volumes of proposals in gold and green Morocco leather and fitted them into tailor-made suitcases. The leather itself cost more than \$4,000. "You have to be a little forward in a situation like this," Hellmuth explains wryly.

HOK is part of another team building a \$3.2

billion King Khalid International Airport at Riyadh. It is designing the terminals complete with lacy steel roof arches. These two projects are part of what Walter McQuade of *Fortune* describes "as the most ambitious peacetime construction program ever attempted." McQuade is completing a book on HOK intended for publication in 1982.

Fortune sent a photographer to the site to "shoot" a retinue of Arabian royalty, led by the king and the crown prince, assembled to inspect a model of the

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King Graf (left) and Jerome J. Sincoff. Each serves as an HOK executive vice president and as a member of the four-person executive committee. Both are alumni.

Ibn Saud, creator of the country in 1925, filled a tent pitched on the site for the ceremony. Hellmuth recalls that everything was proceeding on schedule, until the equivalent of the Saudi's secret service spied *Fortune's* photographer crouching, camera ready, under a table on which the model was perched. Bedlam ensued; order was restored when the visibly shaken photojournalist convinced the Saudis what he held was *really* a camera.

The Saudi projects have brought special problems for Neil H. Porterfield, HOK senior vice president in charge of planning. Landscape architecture falls within his province

George F. Hellmuth calls the HOK architectural design of the terminals at the Riyadh, Saudi Arabia, airport now under construction Gyo's masterpiece. Photo below is of model.

Saks Fifth Avenue's Union Square building (bottom left) in San Francisco was finished last year. Its marble facing matches the columns of the neighboring St. Francis Hotel.

Below are models of the Dallas Galleria now being built on a forty-two-acre suburban site for Texas developer Gerald Hines, who also commissioned the Houston Galleria. Top, the entire complex; below, the ice rink.



and he has been trying to figure out what kind of plant materials to specify and, then, where to purchase them since there are no plant nurseries in Arabia. Porterfield, who believes he is the only landscape architect on the board of a major architectural firm in this country, also grapples with "the nightmarish problem of where to get the necessary water and the maintenance for the plants once they are in place."

Porterfield's interdisciplinary group, in addition to landscape architects, includes urban and community planners, urban designers, land and recreation planners, community- and government-relations personnel, civil engineers, and cost analysts. In a recently published brochure they state: "Where we build, what we build, and how we build are crucial issues in which all people have a direct and personal interest. The ways in which we meet the challenge of our environment are limited only by the vision of our goals and the wisdom of our actions." It focuses on the diversity of projects the group has completed or is working on. Their clients range from Eskimos to Pueblo Indians, and from sheiks to National Park Service rangers. Porterfield's group has wrestled with all kinds of problems from where to locate a new capital in Alaska to city planning for the Emir of a Persian Gulf country who is redoing his palace in the center of town. Porterfield's team of sixty is scattered across the country at HOK's offices. That's another of the firm's strengths, he explained. "We do not have a hierarchical structure. Instead, we have a horizontal management of disciplines functioning side by side with the management of each profit center (i.e., regional office)."

Another of HOK's burgeoning multidisciplinary groups is interiors, which does facilities programming, space planning, interior architecture and design. Alan R. Lauck, thirty-four, is a senior vice president and corporate director of the interiors group of about 135 persons, also strung from coast to coast. "We are growing," he emphasized, "and now are responsible for about 30 to 35 percent of HOK's total business. Last year, according to *Interior Design*, we ranked fifth in size among all interior-design groups and fourth based on fees."

Because of its increasing complexity, in 1979 HOK reorganized its management structure. It purchased Hellmuth's stock to give fifty members of the firm the option of buying it. "We believe we have laid the foundation for continuity," Obata explained. "All too often, architectural firms that didn't plan for the future disappeared when the principal partners left."

Top management of HOK is now the responsibility of the executive committee, comprised of Obata, chairman of the board and chief of design; George Kassabaum, president and chief operating officer; and two executive vice presidents, King Graf and Jerome J. Sincoff, both Washington University alumni (1953 and 1956, respectively). The executive committee and board policies are

administered by the nine-member management committee, seven of whom are alumni.

The HOK organization continues to grow. "The big question of how large it should become is still unresolved," Graf said. It is evident, however, that a real *esprit de corps* characterizes the firm. Those who have been with it for many years insist that it has a special kind of camaraderie and can-do attitude. In November 1974, on a fateful Friday night, a raging fire damaged the firm's St. Louis headquarters. HOK's staff rushed to the scene to spend the weekend cleaning up. Wet blueprints were hung on clotheslines to dry and many working papers were salvaged. Much, including Hellmuth's twelve hibiscus trees, was destroyed. But on Monday morning HOK was back in business. "It's life," Hellmuth is reported to have said. "We can always get more hibiscus trees, but we've got the people. That's what counts." HOK now microfilms all important papers. Not much is said about the conflagration these days, because HOK does not waste time regretting the past.

It does take pride in chronicling its accomplishments. George McCue has stated, "In its home area it has put its indelible stamp on the 'new St. Louis' with design of some of the facilities best known and most used by St. Louisans and visitors. In addition to the McDonnell Planetarium, these include the Yalem Children's Zoo, and the original and first expansion of the Lambert St. Louis Airport." Nationwide its achievements include the design of an airport between Dallas and Fort Worth that is larger than the island of Manhattan. It is also the creator of the Smithsonian's National Air and Space Museum on the Washington, D.C., mall, called by Huxtable "Supermuseum!" She added, "The building cost \$41.4 million, and much is made of the fact, quite properly, that it came in at cost and on time." It is said to be the most visited museum in the world with 50,000 spectators a day filing through its unique display of air and spacecraft from the Wright Brothers' Flyer to Apollo II.

Under the supervision of alumnus Charles P. (Chip) Reay, senior vice president and director of graphic design, HOK is preparing a comprehensive exhibition of its work to be displayed next spring at the Royal Institute of British Architects in London. HOK is the first United States firm to be invited to show its achievements at RIBA's headquarters. After its British viewing, this exhibit will travel to Rome, Germany, Japan, and selected college campuses in this country. For this exhibition, HOK has commissioned George Silk, a photographer for *Time* and *Life*, to take "people-oriented" pictures. "Since we design our buildings for people," Reay said, "it seems antithetical not to depict ourselves in this fashion at the RIBA." This meticulously prepared display will demonstrate HOK's commitment to the design of "buildings that are not only appropriate architectural solutions to the client's requirements, but positively contribute to their surroundings."

TRADING POST

New York Stock Exchange

By Dorothy H. Brockhoff

Even as the jet flies, Post Eight, which now stands tall in the lobby of Eliot Hall, is a long way from Wall Street where it functioned for more than fifty years on the floor of the New York Stock Exchange. One of seventeen such trading posts that weathered bull and bear markets from 1929 until June 27, 1980 (when they were replaced by fourteen electronic models), Post Eight is a venerable artifact of what now has become a trillion-dollar marketplace.

Horseshoe-shaped, this seven-foot Beaux Arts relic has an outside perimeter of twenty-six-and-a-half feet and occupies almost one-hundred square feet of space. Complete with slightly flared footrails of Art Deco style and pigeonholed interior cabinets, this great post is resplendent in its new quarters with complementary photomurals of the Exchange.

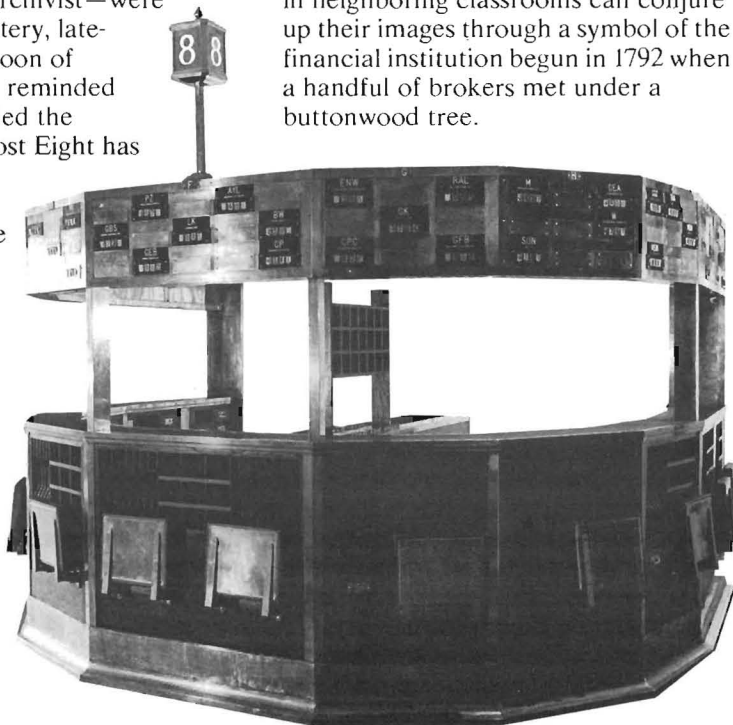
Representatives of the Exchange—Donald L. Calvin, executive vice president, James E. Buck, secretary, Deborah Gardner, archivist, and Bara Levin, assistant archivist—were present on a blustery, late-November afternoon of dedication. They reminded those who attended the ceremony that Post Eight has strong ties with St. Louis. The companies whose stock was traded there include Ralston-Purina, Brown Group, Inc., the St. Louis-San Francisco Railway, and General Bancshares.

When these elegant posts were removed, the New York Stock Exchange

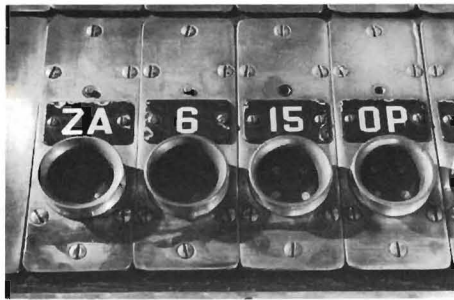
established a program for their restoration and placement in museums and universities throughout the country. One was earmarked for the Smithsonian Institution; others have been installed at Harvard University and the Wharton School of Finance, University of Pennsylvania.

Costs of renovation were defrayed by St. Louis firms and civic leaders: Scherck Stein & Franc, Inc.; Stifel Nicolaus & Company, Inc.; Stanley R. Miller, a Washington University trustee and limited partner, Goldman, Sachs & Company; A. G. Edwards & Sons Inc.; John Simon, I. M. Simon & Company; the Brown Group, Inc.; and Malcolm W. Martin, whose gift was in memory of his brother, William McChesney Martin, president of the exchange before becoming chairman of the Federal Reserve Board.

Thanks to their generosity, Post Eight has found its home in a building housing the departments of political science and economics. Now students who hear of Jay Gould and J. P. Morgan in neighboring classrooms can conjure up their images through a symbol of the financial institution begun in 1792 when a handful of brokers met under a buttonwood tree.



The oak and brass stock exchange post which now graces Eliot Hall foyer looks as solid as the great granite Roman Renaissance structure on Broad and Wall streets which so long sheltered it.

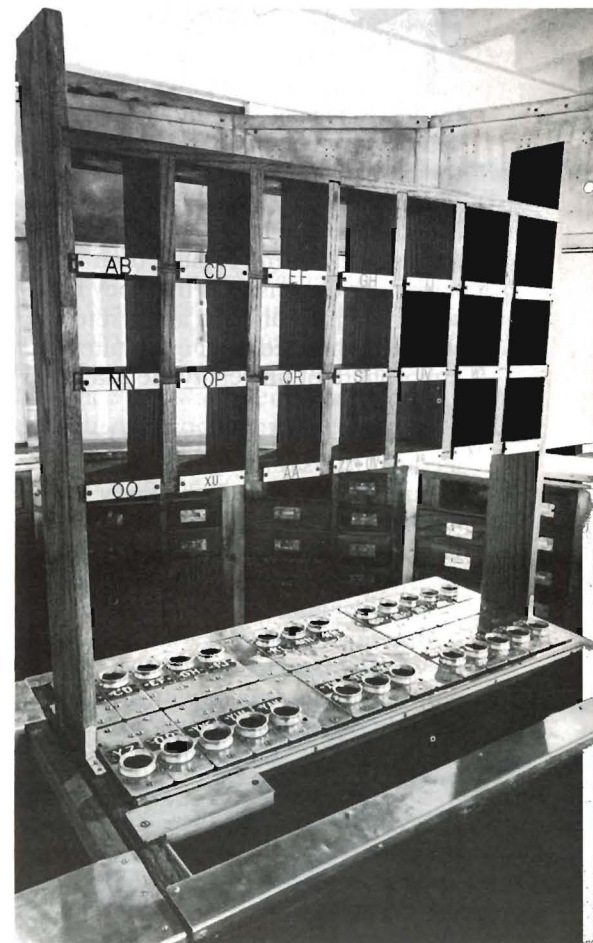


Post Eight is ringed with identification plaques of the forty-one companies whose stock was traded there. The boldface numbers register the last sale.

Looking like miniature portholes, the hollow spheres at far left rim pneumatic tubes used to dispatch stock transactions for relay on tickertape.



Trading floor of the New York Stock Exchange in the 1970s with Post Eight at left foreground. For nearly forty years the record of share volume traded, reached on Black Tuesday, Oct. 29, 1929, stood at 16.4 million. By contrast, the current record, set Oct. 10, 1979, is 81.6 million.



(Top) Pending orders were filed in the cubbyholes. (Below) Specialist traders squirreled their ledgers in the vertical slots and sat on the squares, which unfolded become ingenious seats.

CAPITAL

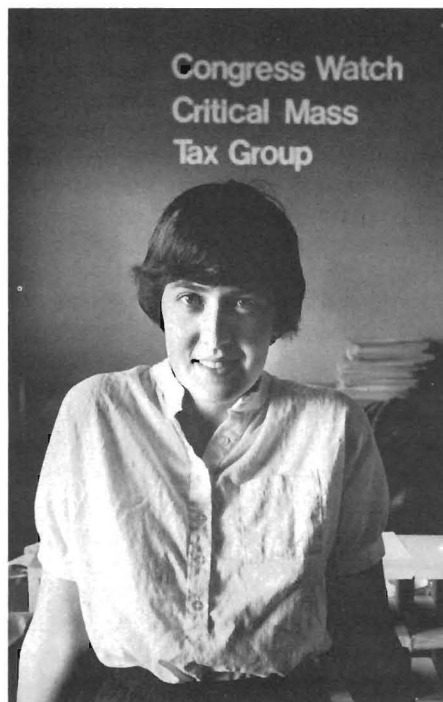
The hardest thing about the Washington Semester—a four-month internship established by the College of Arts and Sciences last year—is coming back. It is not, say the participants, that St. Louis is not Washington, D.C., though it is not. It is not that campus life compares badly to the bustle of the capital; both have their charms. It is that they have sojourned in adulthood and a return to the more directed, sheltered, tutorial atmosphere of university life is a regression.

"I'm not sure I can stand to be lectured to," says JoAnn Vislocky, a prelaw student from New Jersey who has been a researcher at Georgetown University's Center for Strategic and International Studies, a think tank concerning international affairs.

"It is simply going to be anticlimactic," says Katherine Dochnal, a senior political science major with an eye on law school. Katherine went to Washington as an intern with the Washington Federal Savings and Loan Association. Although she admits that she could have found a comparable introduction to the business end of that beleaguered industry in St. Louis, she says that her understanding of how financial institutions are related to and affected by government is immensely more real now. "I'm interested in banking regulation. Here when I call to ask how something works, people often say, 'Oh, you're here. Well, come on over and we'll talk about it.' I'm not reading about it; I'm seeing and hearing it. I work with the results; I go to the Hill to attend hearings and floor action and then I read about it all in the *Washington Post*."

"But helpful as that is, more important, or at least as important, has been my orientation to complete independence. I've come from home in St. Louis county to an apartment in urban Washington, from school to the 'real' world. For instance, the competitiveness in my office is overwhelming. They worried about my presence and I had to assure them that I was not there to compete, but to learn. But by being more aggressive, I've found that I can sit with upper- rather than middle-management and learn more. So in some sense, I've become more competitive."

"Isn't that a good, low-risk way to experience that?" comments program coordinator Karen Dawson of political science. "Not many of us have that opportunity, do we? But interns do. They can stand back a little distance to see the forest without getting involved with the trees, if you will." As a research associate with political science's Center for the Study of Public Affairs, Dawson has supervised a large number of student interns.



"It's the headiness of Washington that affects them to some degree," remarks Arts and Sciences dean Linda Salamon, approvingly. "But reentry from any total immersion program—whether it's an American Friends high school exchange program or our own Year Abroad—is as real a problem as for astronauts."

"This program also owes its beginning to Lucius Barker, director of The Center for the Study of Public Affairs, and Robert Salisbury, professor of political science. To us it seemed terribly important for students—particularly, but not exclusively, our social science students—to understand our political system and how public policy is made. And we are a long way from Washington, so the particular program that Karen Dawson chose, which combines hands-on experience with an academic component, fits the needs of this University very well."

Washington University's Washington Semester is affiliated with the Washington Center for Learning Alternatives (WCLA), a private, nonprofit corporation established about five years ago specifically to manage internships. Although Washington University is a latecomer in the field of D.C. internships—Dawson says that some colleges and universities began affiliate programs in the capital perhaps twenty-five years ago—she, too, feels this particular structure is propitious for Washington University's goals. In fact, the program has worked so well, this year it is being expanded to include a summer internship.

"We would like it to work as part and parcel of the total educational program

Lisa Dowden, an intern with Ralph Nader's Congress Watch, a public-interest lobbying group

GAINS

A new undergraduate program called the Washington Semester integrates an internship in the capital with an Arts and Sciences education.

planning. It doesn't yet. Ideally, we want to introduce students to the program in their freshman year and to begin program planning as sophomores. We do not limit application to social science majors, but we recommend six hours of American politics. Everything in Washington is politics; if they are not aware of the process, they are initially disadvantaged." For that reason, Arthur Pergament, one of the first two participants, undertook an informal independent reading program with Dawson to cover his deficiencies before internship with the Federal Communications Commission. "I'm an economics major interested in the regulatory process, but she was right. I would really not have been prepared to make the most of the experience without her guidance in reading."

Although the University will allow ten students a semester in the program, it has not, in beginning, reached that number. Two students were in Washington last spring, four this fall, and three will go this spring. (A number of University graduate and professional students are in Washington each year under other programs, including the law school's Congressional Clinic supervised each spring semester by Merton Bernstein, Walter D. Coles professor of law.)

"We make the Washington Semester application process stringent," says Dawson, "so that students have well-thought-out, realistic goals. We require an essay and interviews by a faculty-student committee. Two of the initial applicants were turned down but now the applications have improved."

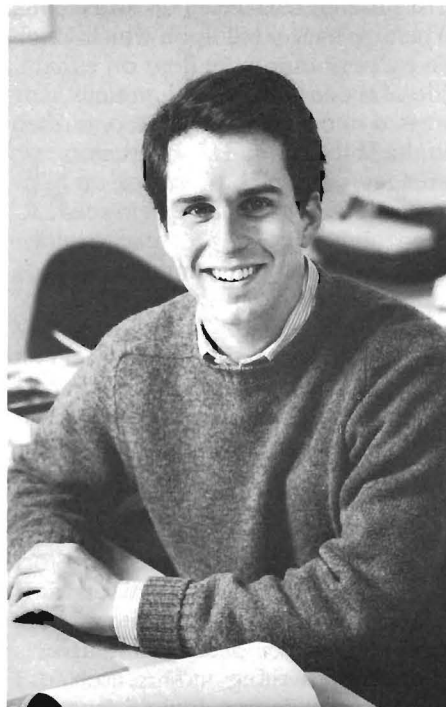
Through WCLA, students are placed in supervised internships in areas of their choice. A WCLA coordinator and an agency sponsor monitor their performance. Students are required to spend four-and-a-half days a week on the job (many spend five), for which they receive nine ungraded credits. They choose a seminar with a WCLA instructor, which meets one evening a week for three credit hours. Upon return, they complete, for a campus faculty coordinator, a research paper developed, in part, from their experience. Satisfactory acceptance of that paper earns three additional credits.

"We feel it is important to require the research component," explains Dean Salamon, "so that the firsthand experience is systematically evaluated and integrated into their larger academic program." Dawson says she

also does "deprogramming," spending time with returnees to help them "talk out" their experiences.

The internship placements themselves have been remarkably varied. Arthur parlayed his split experience with the FCC's consumer affairs and enforcement divisions into a summer job in the Washington office of his New York senator, Alfonse D'Amato. "I'd done some FCC consumer correspondence which I sent to his office and was hired to handle constituency correspondence. And I applied the political techniques I learned with the FCC to get out of gopher work in D'Amato's office, so both positions were very meaningful."

Richard English was on the personal staff of Kansas senator Robert Dole. "I did a little bit of everything, but chiefly I worked for his senior



Richard English, an intern in the office of Senator Robert Dole of Kansas



Arthur Pergament, an intern with the FCC

legislative assistant contacting agencies, putting information together, and presenting it in a clear and concise manner. Academically now I know that I'm much more capable of sifting through material, sorting it out, and writing a concise summary. That's a result of having so much information and so many primary sources available in Washington."

The information glut of Washington has affected each participant. Arriving with antennae up, they were bombarded with signals and, for survival, have learned good screening techniques. A part of each job seems to be to read, interview, watch, listen, and summarize for coworkers and superiors.

Shannon Black admits, "I really got lucky. American Track (Amtrak), the National Railroad Passenger Corporation, has a full-time legislative-affairs officer who is on maternity leave, so I stepped in. I learned the first day that my secretary is my best friend; she's fantastic. I'm really an Amtrak liaison with the Hill. I go to hearings, markups, and floor sessions. I read extensively to learn and keep

others aware of events that have to do with rail legislation. I help arrange special events—I've been to Nebraska and will go to Florida and California—and I've been involved with the first Japanese-American Rail Congress here. I'm really a sort of lobbyist in disguise.

"It's fantastic, but it is also eye-opening. I've discovered how close my performing arts and political science majors are. I know now it's not what you say so much as how you say it and who you say it to. What an experience!"

On the other hand, Lisa Dowden, the only junior currently in the program, is openly involved in lobbying. She works for Congress Watch, the public-interest lobbying arm of Ralph Nader's Public Citizen. Their offices are on the second floor of a somewhat seedy building two blocks east of the Capitol. Her assignment is in telecommunications issues. "But Congress Watch is very crisis-oriented, so we all do everything. When we have a bill upon which we have a position on the floor on either side of the legislature, everyone is pressed into support." She, too, is often on the Hill to attend hearings, conferences, and sessions, to pick up bills or transactions of hearings, to read, listen, and summarize. "We are trying to sort out the telecommunications issue to develop a position. I'm a real part of that process."

Her WCLA coordinator and her agency sponsor worried at first that Lisa was too quiet to hold her own in the independent, egalitarian atmosphere of Congress Watch. They noted with satisfaction that for her, quiet listening was a learning stance. Sturgis Robinson, her WCLA coordinator, wrote in October, "Her agency supervisor expressed a desire that his interns be self-directing, demonstrate initiative, and improve writing and research skills over the term... Lisa seems to be blossoming into just the sort of independent-minded student he prefers."

"So far," comments Dawson, "our students have been earning high marks from almost everyone. It's not only that

they are bright, but they are curious. Supervisors comment that they take the opportunities which are available and follow through on them."

JoAnn Vislocky works directly under Yonah Alexander, Ph.D., at the Center for Strategic and International Studies. She functions quite independently as his research assistant, particularly supporting his studies of international terrorism. She is helping to produce his several current books, talking to all contributing writers, checking, and editing. She is also helping set up a data base on world terrorist activities for Alexander. "I do a lot of research and reporting," she says, "but I've also attended a conference on Turkey and will be going to the Senate subcommittee hearings on terrorism. I have to make an effort to get out of the office and up to the Hill, but I do that."

"With the hiring freeze on many agencies," notes Dawson, "the student help we offer is a boon, but we insist, and WCLA does too, that internships be mutually beneficial. Our students must be used responsibly; they are not volunteers, they are not secretaries, they are not clerical help."

In reality, the full-time internships often carry more responsibility than entry-level college-graduate positions in Washington. "I found," says Arthur Pergament, "that the two-day-a-week intern in my office did odd jobs and I was a regular staffer. I must admit I learned to take advantage of that, too."

Housing is the weakest link of the University's Washington Semester. WCLA places some 300 students in a 1,100-unit aging apartment complex north of downtown Washington. The neighborhood immediately surrounding the Woodner is



Shannon Black, an intern with Amtrak

genteelly decrepit, beyond and between it and downtown is not genteel. "Using the Woodner is a tradeoff," says Dawson. "WCLA hopes to buy its own building for housing soon." The complex, however, is close enough so that students are not cut off from the cultural activities of the city; big enough so that WCLA can develop some collegiate sense there; cheap enough, by Washington standards, to be affordable, and enough like a medium-security institution to be safe inside and out.

WCLA seminars are held in basement conference rooms, so students don't leave the building at night for weekly classes. The seminars cover broad topics to fit internships and academic interests. In some cases, work and study match hand and glove. Lisa's seminar, The Congressional Arena, covers the legislative process with emphasis on points for effective lobbyist intervention and



JoAnn Vislocky, an intern with Georgetown University's Center for Strategic and International Studies

methods of speeding up or slowing down a bill. JoAnn's American Foreign Policy seminar has some common threads with her terrorist studies. Shannon's Business/Government Relations seminar and her Amtrak work strike a fit somewhere in between.

In Washington, all Washington University interns are required to keep a journal—not a diary, not a log, but impressions and insights. Dawson explains, "We tell them that if someone makes a comment that sums up a position, they should write it down. We want them to have recorded their original impressions of how their organizations work, then to be able to see how during the months, they come to understand the real hierarchy and process of decision making and power.

"The fostering of that firsthand analysis is one of the reasons we began the program. We realized that our students were going to Washington anyway, so we felt we should integrate that learning into their whole undergraduate experience."

Richard English is a case in point. In the summer between his sophomore and junior years, while visiting his father in Washington, Richard left his name and a request for full-time work for a semester or a year with several congressmen. When he returned to campus in fall 1980, the University's program was in place. He hurriedly applied and was rejected.

"It was a poor application and a worse interview, they were right. But then, just before Christmas vacation, I was offered a spring-semester job in Dole's office. I delayed going home to Kansas City, reapproached my faculty adviser, rewrote my application, and asked for another interview. Admittedly, I told the committee I was going to accept the job anyway, but to their credit, they were flexible enough to reconsider me; they certainly didn't have to.

"I was pleased to be accepted. Now, I couldn't think of better timing.

Being in Washington at the beginning of a new administration is exciting, but I'm also happy that I've come back to a whole senior year. Although I was in the dumps for a while, I'm really integrating that Washington experience into my political science major in a meaningful way.

"I'm not a straight-A student; I've never been. But now I know I could get straight A's if I wanted to put in the time and effort. I'm just more confident. I don't even worry about law school admission."

"I know it's a funny thing to say," says Arthur Pergament, "because it sounds so trivial, but I got up at 6:30 a.m. to get to my office on the bus every day by 8:15, and never again will an 8:00 class phase me.

"At Washington University, 3.25 students—that's me, B-plus—are a dime a dozen, but we're all so into books, midterms, and research papers, that we don't develop any social graces or worldliness. That's what Washington did for me, and I'm not afraid anymore. I've got it."



Katherine Dochnal, an intern with the Washington Federal Savings and Loan Association



All in All, I'd Rather Be in Philadelphia

After a year of surgical-type treatment, William Penn is back on his pedestal on the grounds of Pennsylvania Hospital in Philadelphia. The 1,500-pound lead statue had been shipped to St. Louis in summer 1980 for conservation treatment. Originally commissioned by Sir Francis Dashwood in 1774 for his West Wycombe Park estate near London, the statue was sent as a gift from Penn's grandson, John Penn, to the hospital in 1802. Although repairs were made in mid-nineteenth century, these had not sufficed.

Phoebe Weil, director of the sculpture conservation laboratory of Washington University's interdisciplinary Center for Archaeometry, and her colleagues also supervised the removal and reinstallation. Their documentation indicates that the sculpture, now believed to be the work of Englishman John Cheere, is among the oldest outdoor metal sculptures in America. "Its problems were mainly structural," said Weil, but much exterior work also was necessary. "He's much more handsome now,"

she added.

In the past decade, Weil has become internationally known as an art conservator. She and coworkers have kept company with the great and the legendary as they clambered over bronze statues from Sitka, Alaska, to Richmond, Virginia. Their current laboratory research extends their work to the conservation of stone sculpture, but their most recently completed field project involved the bronze Larkin Mead sculptures at Lincoln's tomb in Springfield, Illinois.

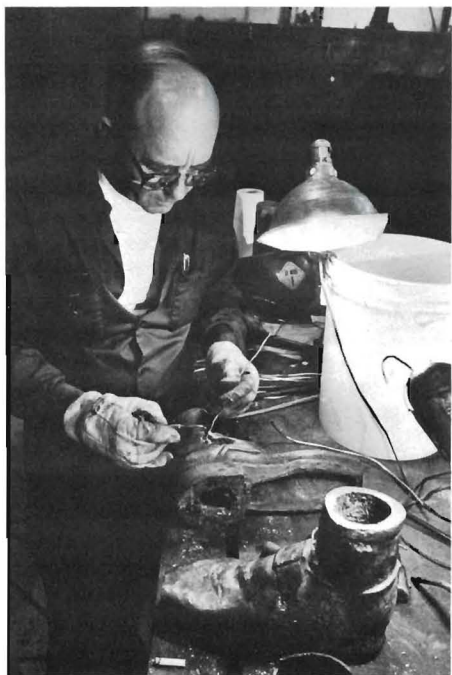


Phoebe Weil (left), Carol Grissom, assistant conservator, and Bob Marti study the Penn for a preliminary technical report.

After gamma-ray radiographs (p. 36) determined point of incision, Weil cleaned out deteriorated core material to reach sustaining leg rods.

All in All, I'd Rather Be in Philadelphia

The 1850s repair distorted the statue's lower portion, so total recast of right leg and feet was necessary. In recasting process, Marti, a conservation technician, made wax positives to experiment before irreversible decisions were made.

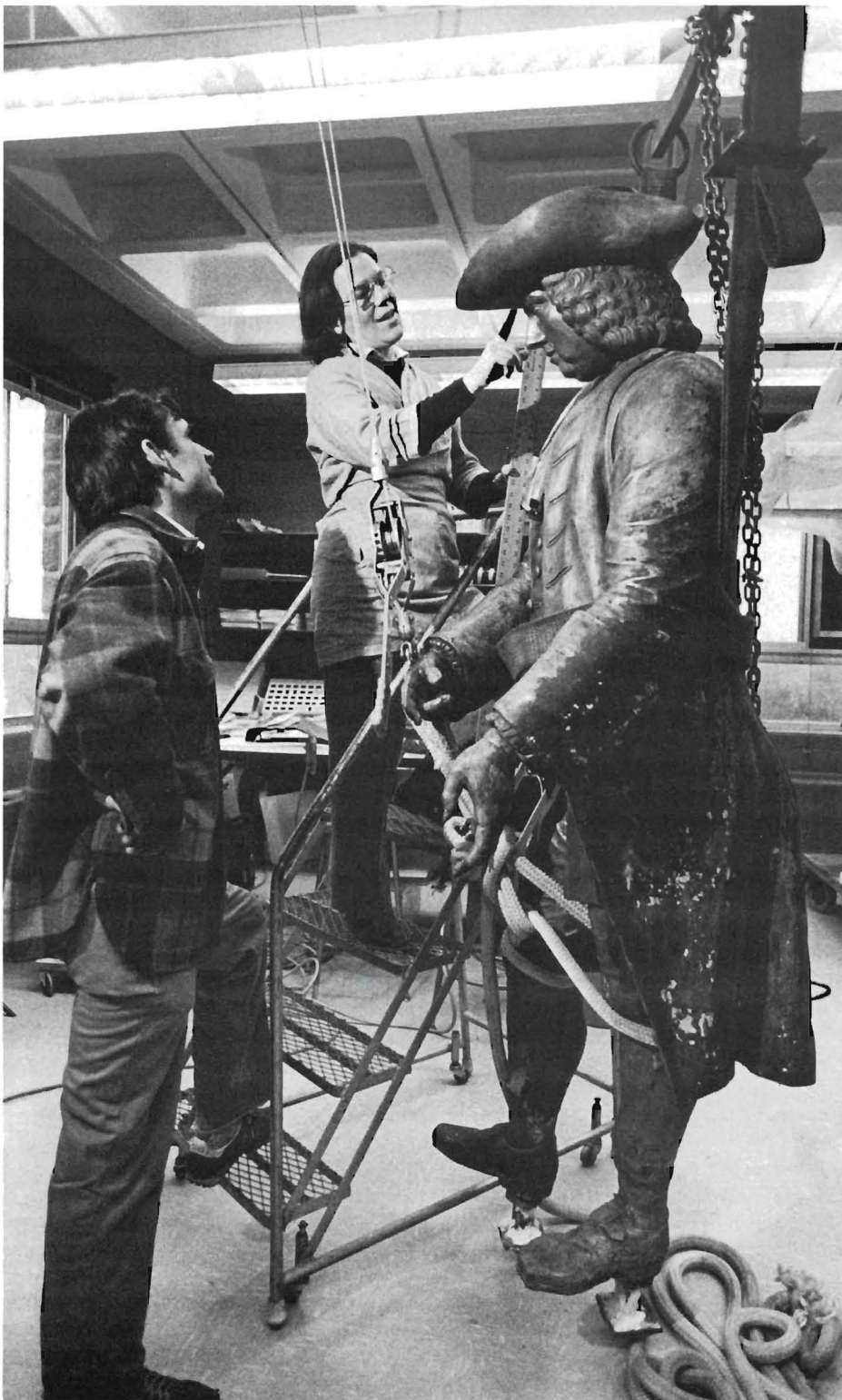


Charles Harrington, a lead burner hired for that work, so meticulously patched every inclusion, epoxy foam refiller seeped out only one pinhole.



Conservators removed seven layers of paint, finishing with soft brushes to avoid scratching the lead.

Weil's background in sculptural history led to an original treatise on proportion. Its formula fit Penn perfectly except for the legs. There an inch, apparently lost in 1850s repair, was subsequently restored.





Weil recarved last two lines on scroll from a version of Penn's original charter edited for the commissioned piece by Ben Franklin.

New stainless steel armatures for legs and a new support network for scroll were designed and built by physics shop machinist Tony Biondo. Leg rods extend from steel diaphragm through heels to steel plate under the pedestal's capstone. Conservators, unable to document the sculptor as John Bacon the Elder (as was thought), believe it was done for West Wycombe Park estate by John Cheere. Like much lead sculpture of the 1700s, it was originally painted naturalistically with black hat, brown coat, and so forth.



To prevent marring the seal, conservators applied clear resin over the natural silver-gray lead when statue was in place. That finish shows detailed chasings lost under the coats of paint.

Comment

Last winter, the *Washington University Magazine* carried a thought-provoking address delivered at freshman orientation by Professor Gerald Izenberg. Following that issue, dozens of requests for additional magazines flooded in. Some asked for copies for distribution to family and friends; some requested permission to use the text for classroom teaching; not a few simply wanted an extra copy for the files.

This issue carries an equally provocative article which was associated with this year's freshman orientation—an address given by Professor Norris K. Smith. Even at this institution, where the undergraduate experience is still reckoned dear, it seems a shame to waste such wisdom on the young. Perhaps that is why we reprint.

Those addresses, however, serve as a reminder of something we often give little mention. Because we have such a wealth of exciting new material—new research, new interdisciplinary programs, new student projects, new faculty—it is easy to lose sight of some of the principles that make this institution so special. One of those cherished predispositions of Washington University is that freshmen and sophomores matter.

Many students come to the University as freshmen with clear, well-thought-out, attainable professional goals. Many come, for reasons too sociologically complex to define here, with professional goals less well-thought-out and not as easily attainable, but basically sound. Many come with vague leanings; some even come completely rudderless. If our students were all of the first or second ilk, the freshman and sophomore years here would be structured very differently.

But, particularly in Arts and Sciences, where many students do not make ultimate vocational decisions early, the quality of the education—as well as its breadth—that leads to the selection of a major can be life shaping. How well students are guided to their

strengths and weaknesses and how well they learn to value being liberally educated are also concerns that shape an institution.

This University commits a great deal of its resources to these tasks. Last fall, 686 freshmen enrolled in the College of Arts and Sciences. In doing so, they selected from two curricular options: the standard pattern in which a student and his or her adviser select each course as an independent area of study (often along preordained lines such as a premed course) or a Focus. Each year about a hundred students—"one of every three freshmen who have not declared as premed," says director Max Okenfuss—elect a Focus.

Created seven years ago under former dean Burton Wheeler, the plan organizes a group of courses (about half of the freshman requirement) around a central topic. The 1981-82 topics are: Comparative Arts, Coming of Age in America, Law and Society, The Search for Values, and Women Emerging. Each focus consists of a core seminar and related courses from the college curriculum. The seminar is a discussion group that draws together faculty and small groups of students to insure informal, personal instruction. It has its own reading requirements, but it also weaves itself around the other focus courses taken in common by the group.

The focus plan creates for each freshman enrolled in it a university community, but it also introduces students very early to an integrated interdisciplinary perspective.

Two years ago Linda Salamon, dean of the College of Arts and Sciences, introduced into the college's curriculum a one-credit course which she calls College 101. Conceived as an introduction to the breadth of the college's offerings and drawing on many senior professors, the course is a sampler: one week Robert Salisbury will lecture on political science; another, James Miller will speak on physics; and in between Wayne Fields will speak on English.

Most important, however, is the commitment that in all divisions of the University, senior professors teach freshman and sophomore courses: Peter Riesenbergh teaches Western Civilization; Peter Gaspar, David Gutsche, and Edward Macias rotate through the beginning chemistry courses; Howard Nemerov, Linda Salamon, and Naomi Lebowitz do the same with an honors seminar in English; Johns Hopkins teaches freshman biology; Bob McDowell takes his turn at beginning calculus; Patty Jo Watson handles Introduction to Archaeology; Nelson Wu, Stanley Spector, and Thomas Rimer are among the lecturers on the podium for Asian Studies 177, a Survey of Oriental Culture; Dan Shea takes the sophomore course, An Introduction to Reading and Writing about Literature; Nemerov and Lebowitz also offer sophomore courses; Carl Wellman regularly teaches a 200-level philosophy course on biomedical ethics.

In the art school, Stanley Tasker teaches beginning drawing, Herb Weitman handles beginning photography, and Howard Jones offers the opening multi-media course. The first architecture course, Introduction to Design Processes, is taught by a team that regularly includes Dean Constantine Michaelides. In engineering, in business, everywhere at Washington University, beginning students see full professors. And that matters tremendously.

Recently a letter arrived which began "I was a physics major at Washington University, but I will never forget the art history course I took from Norris Smith..." That application of the best resources of the University to its youngest students is so everyday at Washington University, sometimes we forget to remember it.

D.W.



H.M.S. Pinafore

Some 7,000 persons filled Edison Theatre to standing-room capacity for ten late-December performances of Gilbert and Sullivan's H.M.S. Pinafore, presented by Washington University and produced by Opera Theatre of St. Louis. Above, John Stephens as the first lord of the admiralty; top, Glenn Siebert and Ruth Golden as the sailor and his lass, the captain's daughter; right, sailors' trio, "A British Tar."



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